DOCUMENT RESUME

ED 232 247 EA 015 791

AUTHOR Carron, Gabriel; Chau, Ta Ngoc
TITLE Reduction of Regional Disparities: The Role of Educational Planning.
INSTITUTION United Nations Educational, Scientific, and Cultural Organization, Paris (France). International Inst. for Educational Planning.
REPORT NO ISBN-92-803-1100-X
PUB DATE 81
NOTE 124p.
AVAILABLE FROM IIEP Publications, International Institute for Educational Planning, 7-9, rue Eugene-Delacroix, 75016 Paris, France (Order No. A.95; 40 francs; also available in French).
PUB TYPE Books (010) -- Reports - Research/Technical (143)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Case Studies; Comparative Analysis; *Differences; *Education; Educational Assessment; Educational Cooperation; Educational Environment; *Educational Planning; Educational Strategies; Evaluation Methods; Foreign Countries; Global Approach; *Regional Characteristics; *World Problems
IDENTIFIERS Africa; Asia; Europe

ABSTRACT

Based on eight monographs presented and discussed at a working meeting of the International Institute for Educational Planning (IIEP) in 1977, this summational report is intended to be used by educational planners for a reduction of regional disparities through school network reorganization and improvements in educational service. Part I discusses the regional approach to the problem of educational disparities with reference to countries such as Thailand and Kenya, identifying both interregional and intraregional disparities. Part II establishes criteria for measuring disparities, beginning with such commonly used indicators as quantitative expansion of the education system and efficiency of educational service, and demonstrating three different types of evaluative analysis: evolution of disparities in time; evolution of disparities at different levels of the education system; and the relation between educational, economic, and social disparities. Part II also includes a proposed classification of educational indicators for analytical purposes. While part III focuses on disparities in educational access, school progress, and scholastic achievement, part IV reviews measures currently envisaged by governments for reducing regional disparities and discusses their implications for educational planning. (JBM)

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International Institute for Educational Planning

ED232247

Reduction of regional disparities: the rôle of educational planning

Gabriel Carron and Ta Ngoc Châu

U.S. DEPARTMENT OF EDUCATION
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Paris 1981

The Unesco Press

EA 015 791

Published in 1981 by the United Nations
Educational, Scientific and Cultural Organization,
7, Place de Fontenoy, 75700 Paris
Printed by Imprimerie Georges Thone, Liège, Belgium

ISBN 92-803-1100-X

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Preface

The experience of the last two decades has shown us that quantitative growth in an educational system is not enough to ensure the democratization of education. As a result, fair treatment is tending to be given increasingly higher priority in a growing number of countries; educational programmes seek to give more concrete expression to the goal of democratization, in the form of measures to reduce specific inequalities. People are no longer satisfied with the general notion of greater equality of opportunity; instead they prefer to spell out specific objectives pointing in the direction of greater equality, or rather of reduced inequality: greater equality of access to the different levels of the educational system; greater equality of opportunity to complete a given level of studies; greater equality in school results; greater equality of access to work and career opportunities. Furthermore, attention is now being paid to practical inequalities affecting specific categories: women, under-privileged groups, rural areas and backward regions. The evolving notion of inequality manifests itself in different ways, depending on the country: in some cases, higher educational spending has led to new inequalities; elsewhere, it is the growth in the educational system which has made disparities formerly held to be inevitable less tolerable; sometimes, uneven economic growth has bred new demands on the part of backward regions, and has also found expression in greater social pressure for education. In most cases, growing awareness of disparities has been an indirect consequence of growth, and this has been reflected in demands for an end to inequalities. Governmental policy measures too exhibit a wide degree of diversity.

In its first Medium-Term Plan (1973-1978) the IIEP conducted a series of studies on regional inequalities, a subject to which many countries attach growing importance in their policies for economic and social development. Several of these studies discuss conceptual issues connected with the definition of policies to reduce regional disparities and with the economic, political and social factors conditioning them. Others take the form of national case-studies, examining the way in which regional educational inequalities can take different forms in different social and political contexts.

Most of these studies were reviewed at a Seminar held by the IIEP in November 1978; they were then revised by their authors and subsequently published.

The present publication is the final report on this IIEP research programme. It is based on all the different contributions to this project, as well as on the discussions at the above-mentioned seminar. It is addressed in the first place to educational planners, and is intended to offer them some basis for understanding and on which to make judgements when asked to devise objectives to attenuate the operational consequences of regional disparities by reorganizing the school network and improving the quality of the educational service.

Subsequent work on this regional disparities programmes has taken the form of methodological studies on the construction of synthetic indicators of disparities. Furthermore, the Institute is now concerned to investigate broader aspects of inequalities. The principal theme of the Medium-Term Plan approved for the period 1979-1983 is the study of educational reforms with a view to adapting educational planning and administrative methods to the new tasks involved in the preparation and implementation of these reforms. Among these, special attention is being paid to reforms designed to reduce educational inequalities: these include regional disparities, as well as ones affecting rural areas, women, deprived groups and minorities. This programme is being implemented chiefly by means of co-operation with national research units and institutions.

This synthesis report, therefore, represents a stage in the IIEP's long-term concern to develop more effective planning techniques, aimed at defining concrete tasks in line with government-established objectives of equity, on the basis of the international community's most significant experiences.

We should like to take this opportunity of thanking the Government of Finland and the B.M.Z. of the Federal Republic of Germany for their financial assistance in the preparation and implementation of this research programme.

Michel Debeauvais
Director, IIEP

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Introduction

It may seem a little surprising, at first sight, that regional disparities in educational development should have received so little attention. In the vast body of literature dealing with the problem of inequalities, most researchers have focused on the social dimension, examining to what extent and why different groups in society benefit unequally from educational services, and the consequences of this state of affairs.

The most likely reason for ignoring the spatial dimension is that researchers have preferred to go straight to the heart of the matter. For the fact is that school is not a service like any other, such as the health or public transport services. It is not just a commodity, supplied to the population: it is at the same time a mechanism by which positions and status in society are allocated. In this sense, the school lies at the heart of the problem of social structure and its reproduction. In analysing disparities, therefore, the question of social inequalities constitutes to some extent the central problem. But while the school may not be a service like others, it is a social service all the same, from the standpoint of its organization in particular. And that is indeed how the education planner sees it. For him, the goal of greater equality boils down first of all to two questions: how to ensure more equal opportunity of access to education for all? and how to ensure more equal treatment? Some would add a third question: how, if possible, to ensure more equal results? In fact, these questions are no different from the ones planners in any of the social services ask themselves, whether dealing with health or security. In each case, it is necessary to organize a material and human infrastructure in such a way as to permit everybody to benefit from them under comparable conditions, which assumes that access to and the quality of the service are equal (this is not the same as identical) for all.

Thus stated, implementing the goal of equality is first of all a problem that needs to be considered spatially, even if the planner's work does not stop there and also has to take into account the impact of the educational service on wider inequalities of a socio-economic, cultural or political character. In other words, the regional approach may be justified on technical grounds; but a study of the problem cannot restrict itself to this narrow investigative framework.

On the contrary, it must constantly situate its analysis of educational disparities in the context of problems of inequality in general.

A second reason why regional disparities deserve study is political in character. Reducing regional disparities has become a major concern in many countries. It is a striking fact that priority is often given to this goal even when other types of inequality, say between rural and urban areas or between socio-economic categories, are greater than those between regions. To understand the reason for this, we must take a look at the very special rôle played by the school in the preservation or construction of national unity. To begin with, political leaders see the school as an institution capable of integrating children into a national culture, and they accordingly make a point of ensuring that this institution is represented in every region. Secondly, any kind of falling-behind in the development of schooling is quickly resented by regional communities as the expression of a lack of interest on the part of the national authorities and is liable to arouse regionalist feeling, which could pose a threat to national unity. This danger is all the greater in the newly-independent countries, where this unity is still tenuous and where ethnic, linguistic and religious differences coincide with regional boundaries. In such circumstances, the goal of reducing regional disparities may undoubtedly find ethical justification on grounds of social justice and equity; but in practice it is often unavoidable on purely political grounds. The problem is to know what content to give to this reduction precisely when each region has its own specific characteristics.

At this point, a third reason arises for exploring the regional approach. This approach both enriches and complicates the debate on greater equality by raising the problem of diversity in human, physical, linguistic and cultural situations in different regions. Given this variety of situations, and hence of needs, is it possible simply to assimilate greater equality in the educational service to greater uniformity? If not, then how can we achieve greater equality while respecting diversity? The regional approach thus embraces a whole series of problems of its own which necessarily raise fundamental questions as to the very notion of greater equality, the rôle of the school in relation to regional cultures and its function in the process of national construction, the equal rights of each individual and of each community to enjoy its cultural identity and to participate fully in the policy-making processes and organization of society at large.

These are the thoughts that have inspired the IIEP research project on regional disparities in the field of education. Owing to the lack of a body of well-established knowledge on the subject the project has primarily been an exploratory one, the chief aim being to stimulate general discussion on the importance and significance of regional disparities in various geographical and cultural contexts, and on the relevance of attempting to reduce these disparities in different economic, social and political circumstances.

To achieve this end, researchers from different backgrounds, working in a number of different specialities, were invited to contribute studies. Two types

of monograph have emerged from this. One is of a more general, conceptual nature, presenting different, sometimes opposing, views on three complementary themes: relations between regional disparities in education and the process of economic, social, cultural and political development; the relevance of the regional framework in analysing educational inequalities; and, lastly, the implications of a policy to reduce regional disparities in education. Other monographs deal with specific situations in one or more countries, while providing concrete illustrations of certain more theoretical and conceptual points.

The eight monographs thus written were presented and discussed at a working meeting held towards the end of 1977, which was attended by their authors as well as a small number of other researchers invited to take a critical look at the project. Most of the monographs were very substantially revised in the light of the wealth of material produced by discussions at this meeting. They were subsequently published in two volumes.[1]

The first volume contains four contributions containing as many different, and sometimes opposing, views on the problem of disparities. Three of these contributions are general in character, although two refer to specific geographical contexts. P. Foster's study was inspired above all by the situation in Africa, and that of P. Furter by the European experience. The fourth contribution takes the form of a national case study of a socialist country's experience, that of Hungary.

The authors of the monographs were deliberately selected for being of contrasting specialities and schools of thought. This is why in this first volume the reader will find views inspired by an economist's standpoint, by a socio-cultural standpoint, by a socialist as well as a liberal outlook. At no time has the Institute attempted to impose a single frame of reference nor to derive any kind of convergent theory. By its very nature, the problem of inequalities is a matter of controversy. This controversy grows all the sharper when one tries to direct discussion more explicitly to policy, or rather policies, aimed at reducing these inequalities, as was the case with this project. Indeed, not only does the actual value placed on concrete goals of reduction depend very heavily

1. Volume I: *Regional disparities in educational development: a controversial issue*, Paris, Unesco Press, 1980.
This volume includes the following studies: P. Foster, *Regional disparities in educational development: some critical observations*, pp. 19-48; P. Furter, *The recent development of education: regional diversity or reduction of inequalities?*, pp. 49-114; S. P. Heyneman, *Planning the equality of educational opportunity between regions*, pp. 115-174; Z. Ferge, E. Havasi, J. Szalai, *Regional disparities and educational development in Hungary*, pp. 175-257.
Volume II: *Regional disparities in educational development: diagnosis and policies for reduction*, Paris, Unesco Press, 1980.
This volume includes the following studies: J.-Y. Martin, *Social differentiation and regonal disparities: educational development in Cameroon*, pp. 21-114; P. Hugon, *Regional disparities in schooling: the case of Madagascar*, pp. 115-196; K. Sudaprasert, V. Tunsiri and Ta Ngoc C., *Regional disparities in the development of education in Thailand*, pp. 197-324; D. Court and K. Kinyanjui, *Development policy and educational opportunity: the experience of Kenya and Tanzania*, pp. 325-409.

on the individual's personal and ideological convictions, but, what is more, what can be achieved in one social and political system may not necessarily be so in another. This means that the aim of these monographs is to raise a number of questions and stimulate thinking among planners, to whom they are addressed in the first place, on the possibilities and limitations of a policy aimed at greater equality in the context of their own respective countries.

The same remarks apply to the national case studies presented in volume two. Methodologically speaking, these studies illustrate different ways of diagnosing and analysing the determinants of existing disparities. But they also show the implications of and restraints upon certain equalization measures in specific socio-economic and political development contexts. They in no way claim to put forward models or generally applicable solutions.

In any case, the countries were not chosen for their representativity but on the basis of much more pragmatic rules and for reasons of convenience, either because it proved possible to establish contact with experienced researchers in the field, or because data were already available and required no special gathering. As it happens, three of the four studies concern African countries (Cameroon, Madagascar, Kenya and Tanzania), and one an Asian country (Thailand). Doubtless it would have been more fruitful still to have been able to present a more contrasting range of geographical and cultural situations. It is hoped nevertheless that the authors' approaches to the general theme have been sufficiently open-ended to make the scope of their studies broader than the national frameworks to which they refer.

What follows is the final report on this IIEP research project. It is based on all the different contributions prepared for the project and on discussions held during the course of the working meeting mentioned above. It is primarily intended for the use of education planners and seeks to provide some pointers towards an answer to their concern to reduce regional disparities through reorganization of the school network and improvements in the quality of educational service. Naturally, a variety of technical problems have had to be raised, but they have been discussed in relatively general terms, and precise references to project monographs or specialist studies have been indicated for the use of readers wishing to study these problems in greater detail.

Part I discusses the regional approach and stresses the variety of ways in which the authors of the different monographs have conceived the notion of region. It also deals with the two complementary aspects of the study of disparities, namely the identification of inter-regional disparities and analysis of intra-regional disparities.

Part II is concerned with the measurement of disparities. It starts with the indicators commonly used and seeks to demonstrate the different types of analysis which can be used to evaluate the extent of existing disparities, to monitor their evolution in time, and to determine their relations with other types of economic and social disparities. It culminates in a proposed classification of educational indicators designed to identify those indicators that are most relevant to the needs of analysis.

Part III deals with the determinants of regional disparities and in particular examines those affecting disparities in access, disparities in progress through the school system, and disparities in scholastic attainments.

Part IV, lastly, reviews a number of measures to reduce regional disparities currently being envisaged by governments. It seeks also to find out what achieving this objective would imply for education planning, bearing in mind that, in countries where primary schooling is not yet universal, the goal is in fact twofold: (a) to ensure a minimum of education for all children, which implies both a broadening of access and improved retention rates in primary education, and (b) to achieve a fair allocation of the limited number of places available in the different stages of post-primary education.

I. The regional approach

The importance of regional disparities in many countries is undeniable. However, identifying the nature and the dimensions of these disparities immediately raises methodological problems which to a large extent stem from the fact that even the concept of region is still rather ambiguous.

Until now, the regional approach has mainly been the preserve of economists and geographers.[1] Much of their work has been of great value, but does not always provide pointers of direct use to educational specialists.[2] For this reason, the first part of the present study will discuss certain methodological aspects connected with the development of a regional approach as applied to the educational sector; special reference will be made to the case studies prepared within the Institute's research project on regional disparities, and more particularly to the manner in which the authors have defined the notion of region and the way in which they have proceeded to analyse these disparities.

We shall start by discussing the choice of the region as a unit of analysis, mentioning the difficulties arising from the methods by which data are collected and consolidated. We shall then go on to see how inter-regional disparities in education may be assessed, and their links with other kinds of disparity. Lastly, we shall take a look at intra-regional disparities, and in particular at the relations between regional disparities and rural/urban disparities, and between regional disparities and social inequalities.

1. For a synthetic presentation of work done by economists see: J. Glasson, *An introduction to regional planning*, London, Hutchinson Educational, London, 1974; J. C. Perrin, *Le développement régional*, Paris, Presses Universitaires de France, 1974; and of work done by geographers, see: E. Jones and J. Eyles, *An introduction to social geography*, Oxford, Oxford University Press, 1977; B. E. Coates, R. J. Johnston and P. L. Knox, *Geography and inequality*, Oxford, Oxford University Press, 1977.
2. Mention should be made however of some studies which deal specifically with educational problems: J. Bugnicourt, "Disparités scolaires en Afrique", in *Tiers monde*, Tome XII, No. 48, October-December 1971; J. Bugnicourt, *Disparités régionales et aménagement du territoire en Afrique*, Paris, Armand Colin, 1971; R. Ryba, "Aspects of territorial inequality in education", in *Comparative education*, Vol. 12, No. 3, October 1976.

A. The region as an analytical framework

Defining the analytical framework is a precondition of any regional-type study. In any given country the notion of region may refer to a whole range of different territorial units, from local to national level. In Thailand, for example, we might refer to the four geographic regions, to the seven economic development regions, to the twelve education regions, to the 70 provinces (*changwads*) or to the 509 districts (*amphoes*).[1] Each of these divisions has its own characteristics and justification, and none takes precedence *a priori*. In fact, the criteria for drawing up regions are many, and all kinds of region may overlap or coincide with each other. All in all, the kind of region selected will depend on the kind of analysis one plans to undertake and on the problems to be studied. This is clear from the very different concepts of region employed in the case studies prepared for the project on disparities.

In the study on Thailand, whose purpose was chiefly descriptive, the analytical unit selected was the *administrative unit*, and more specifically the *changwad*. The reason is that it serves as a basis for the gathering not only of educational variables but also of demographic, economic and social data. Furthermore, the number of *changwads* (70) is sufficiently high to permit significant statistical analyses. The administrative division of the country into provinces and districts was also used in the comparative study of disparities in Kenya and Tanzania.[2]

Conversely, in the studies of Cameroon and Madagascar, which were explicitly designed to analyse the origin and reproduction of disparities in their spatial context, the authors have employed a different concept of the region. In the case of Madagascar, P. Hugon distinguishes five regions, which he calls *geographical*, as distinct from administrative regions. He draws up these regions by combining several differentiating factors: topographical, climatic, geological and human.[3] The framework thus defined corresponds to its analytical purpose, which is to illustrate empirically the way disparities in educational development form part of a wider process of uneven development of the trade economy and the state apparatus.

J.-Y. Martin adopts a similar approach, although he lays greater emphasis on sociological factors in the differentiation of national territory. In his view, one cannot account for regional disparities in Cameroon unless one takes into consideration the very different ways in which communities reacted to colonialism. This is why he insists first of all on the different types of social and political organization in these communities as the criterion for the drawing of regional boundaries.

1. K. Sudaprasert, V. Tunsiri and Ta Ngoc C., *Regional disparities in the development of education in Thailand*, op. cit., pp. 213-214.
2. D. Court and K. Kinyanjui, *Development policy and educational opportunity: the experience of Kenya and Tanzania*, op. cit.
3. P. Hugon, *Regional disparities in schooling: the case of Madagascar*, op. cit., pp. 119-132.

> From a sociological viewpoint, the existence of a region is not something conferred upon it by the state but primarily the *structure of relations* between the different actors or social sysems comprising it.... The structure of these relations is the product of history.... The region may thus be considered as a well-defined *socio-historic* complex—or unit—occupying a certain geographical area. What is determinant is the notion of integrated heterogeneity—or relative homogeneity. This implies the existence of an integrating—or focal—element, a point of convergence for the social relationships linked to natural conditions and historical events, and which may be a system of production, a social group or a town. Whatever viewpoint one adopts, one cannot discard the others and a region is always the combination of several dimensions, i.e. natural, historical, economic and political.[1]

The author tends to stress the socio-historical dimension precisely in so far as this enables him to integrate the others. "A component of any social system is its relation to natural conditions and the state of these relations is conditioned by history and by internal and external politico-economic determinants."[2]

The definition put forward by P. Furter, derived from a *socio-cultural* approach, differs yet again, although it is situated in the same historical perspective. What interests the author above all is the changing relations between cultural diversity, regional demands and policies to reduce inequalities. This is why he seeks to apprehend the region not as a territorial unit but from the standpoint of its internal dynamics, that is, in its genesis and its motion. For him,

> The region originates from the hypothesis that there are social realities which have had, *during the course of history*, sufficient organization and internal cohesion to constitute a people, i.e. 'an entity which tends to be long-lasting and specific'. However, this 'historical entity' is not always easily recognized, particularly when it does not manifest itself in the form of a specific geographical area with clearly defined boundaries and limits. This is obviously the case of very many minorities whose historical permanence is none the less assured, not to say explained, by their capacity to transmit—through formal or informal education—their specificity, their values, in short their civilization from generation to generation. These minorities develop into regionalist movements, i.e., the historical entity becomes a regional consciousness, when two spatial elements coincide. First there is the emergence of a feeling of belonging, which takes the form of highly emotional concepts such as one's 'native land', 'home country', 'birth-place'. It could be said that this sentiment is an expression of a desire to be united in a collective and common identity, manifested in proximity and neighbourliness. This feeling is allied to another, equally deep and equally emotional, which tends to make a distinction between neighbours and outsiders. The limits ... of this social and cultural entity do not necessarily coincide with any spatial limit nor with any precise and officially recognized border.[3]

1. J.-Y. Martin, *Social differentiation and regional disparities: educational development in Cameroon*, op. cit., pp. 41-42.
2. *Ibid.*, p. 42.
3. P. Furter, *The recent development of education: regional diversity or reduction of inequalities?*, op. cit., pp. 68-69.

Very different, lastly, is the regional framework applied in the study on Hungary. This framework is based on the concept of the *polarized socio-economic* region, as defined by the new regional planning system set up in 1971. This system classifies population settlements in five categories according to the national or local rôle they play in development. The classification of these settlements in three categories (Budapest, other towns, villages) is, as the authors point out, a simplified version of the more detailed system laid down by the plan.[1] If fits in with the aims of the study, which are to demonstrate the influence of government regional development policy on the reduction of disparities in education.

This brief look at the different concepts of region employed in the various case studies shows that there is no single definition, and that the choice of analytical unit to a large extent depends on the aim of the study to be undertaken. At the same time, it shows that the choice of the region is by no means a simple technical question of territorial division but that it is a reflection of a whole approach, closely bound up with one's working hypotheses and the explanatory models one wishes to test. Even so, defining a regional framework and fixing boundaries pose a number of technical problems that require closer examination.

B. Identifying inter-regional disparities

In so far as analysis of regional disparities is based on existing data, it is bound to rely on the base units employed in the collecting and consolidation of these data. For practical reasons, whichever regional framework one opts for, its construction must start out from pre-defined administrative units.

Selecting a spatial configuration

In the light of the different case studies, it appears that two different, though complementary, approaches have been adopted in constructing this framework. The first aims solely at highlighting the spatial configuration of disparities, without attempting to formulate *a priori* explanatory hypotheses. Essentially, therefore, this approach consists in grouping together base units according to the value of a given variable, which may be an educational variable or, where appropriate, an educational variable associated with a demographic variable.

The choice of this base unit will obviously depend on the degree of break-down in which school statistics are presented or available, but preferably it will be small enough to be relatively homogeneous.

In the case of Thailand, for example, the province (or *changwad*) was chosen as the base unit. These provinces were classified in five broad categories taking

1. Z. Ferge, E. Havasi, J. Szalai, *Regional disparities and educational development in Hungary*, op. cit., pp. 182-186.

into consideration the national average and the dispersion of provinces around that average. In this way it is possible to demonstrate the geographical distribution of provinces with different levels of school development.

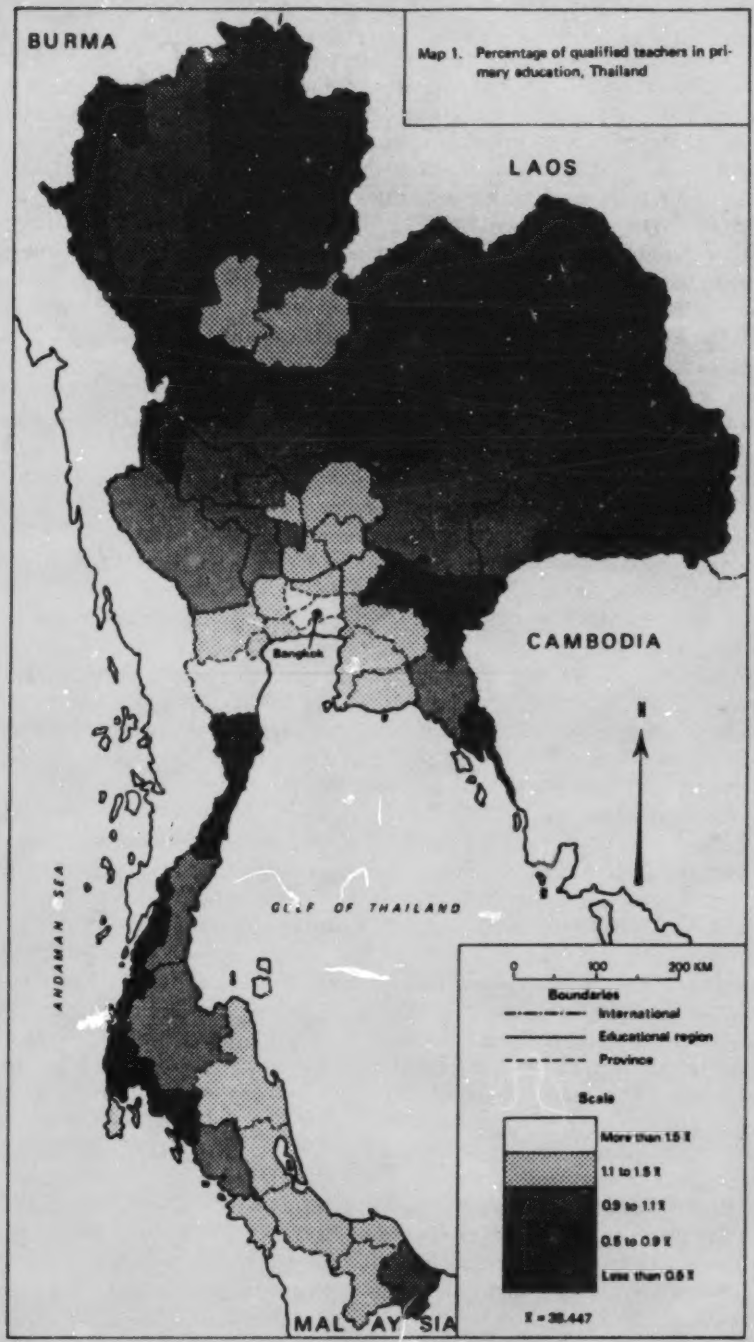
If, by way of illustration, we take the percentage of qualified teachers in primary education, we find that disparities correspond to a fairly marked centre-periphery configuration (see Map 1). Whereas the percentage is relatively high for Bangkok and provinces contiguous to it, it drops gradually as one goes towards the provinces in the North and the North-East. The situation is relatively better in the southern provinces, except in those of the South-West.

The procedure we have just described is convenient, certainly, since it gives us an overall picture of disparities between provinces and the way these are spread geographically. It should be pointed out, however, that provinces are classified on the basis of their average, which presupposes that the province itself is an homogeneous unit, or at least that, inside each province, deviations from the mean are not all that great. Were the contrary to be the case, the configuration thus produced would not reflect the actual situation.

The importance of choosing the right base unit

It is here that the choice of base unit takes on special importance, as the case of Kenya demonstrates. In this country, we may identify disparities by taking as our base unit either provinces, of which there are seven, or districts, which are 41 in number. If we take the provinces as our base we are liable to present a very distorted picture, since situations inside the provinces are far from homogeneous. In fact, the dispersion of districts around the provincial mean is very great. In the Rift Valley province, for instance, the average enrolment rate in primary education is 43 per cent, but if we take the districts in this province separately we find that the rate varies between 5 per cent in the Turkana district and 71 per cent in the Laikipia district. Similar situations are encountered in the other provinces of Kenya, as can be seen from Figure 1, which compares the average rate of primary school enrolments in each province with the enrolment rates in the different districts making it up.

If, as before, we group the districts into five categories taking into account deviations from the average enrolment rates for the country as a whole, we find that the configuration of disparities in primary schooling more or less conforms to a centre-periphery model (see Map 2). What needs to be pointed out above all is that this configuration *in no way coincides with provincial boundaries*. The central districts, where school enrolments are high, straddle several provinces. Similarly, enrolments drop gradually through a series of more or less concentric areas until we reach the North and North-Eastern districts, where rates are very low. Consequently, each province is made up of districts having very different school enrolments rates. The Eastern province, for example, which runs practically from North to South down the length of the country, encompasses a district with a very high rate of school enrolment (Machakos), one with a high rate (Embu), two with average school enrolment rates (Meru and Kitui), and two with low rates (Isiolo and Marzabit).



Map 1. Percentage of qualified teachers in primary education, Thailand

SOURCE K. Sudaprasert, V. Tunsiri and C. Ta Ngoc, op. cit., p. 245.

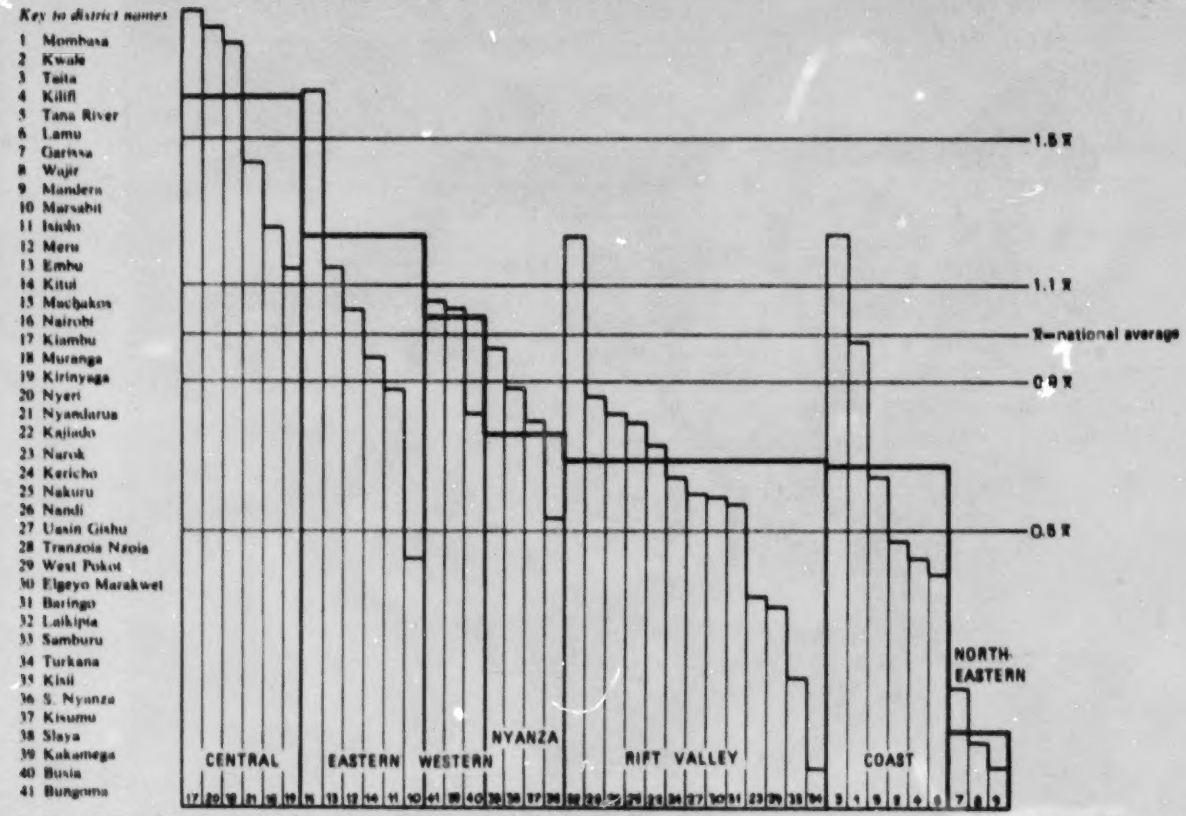
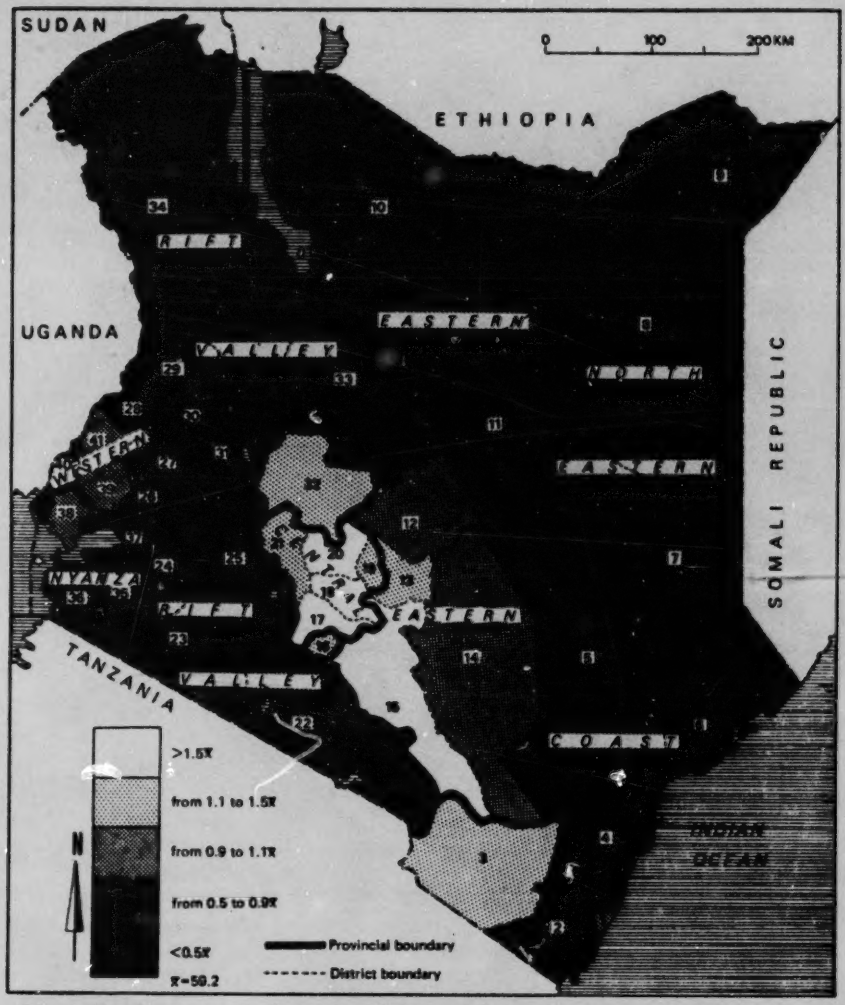


FIGURE 1. *Enrolment rates in the various provinces and districts of Kenya.* SOURCE D. Court and K. Kinyanjui, op. cit., p. 344.



MAP 2. *Enrolment rates in the various districts of Kenya.*

By thus switching from large administrative units to smaller ones we arrive at a more exact image of the contours of educational disparities. There are, however, limits to the smallness of these units, either because their proliferation makes the presentation of data too complicated or else because data are not available at this level of disaggregation.

Using different bases for different data sources

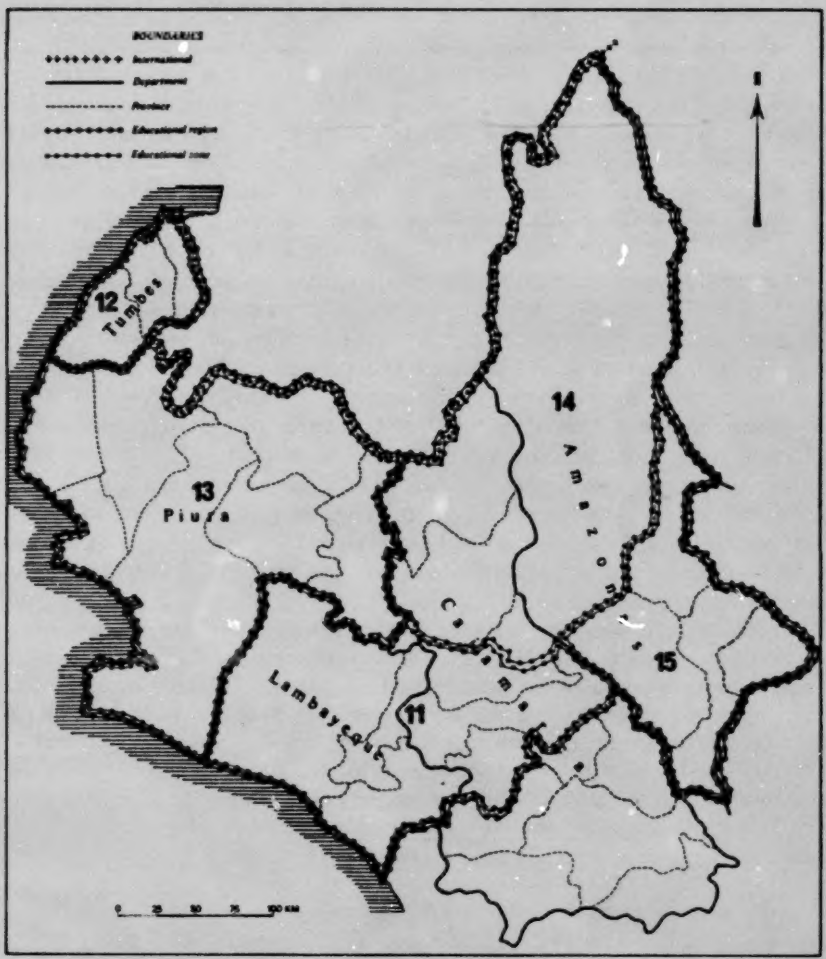
The problem becomes more complicated when the information required comes from two different sources, which frequently happens when it is necessary to relate school enrolments to school-age population. It sometimes happens, for example, that the units used for the collection of school data do not coincide with those used for the collection of population data. Peru, for instance, is divided into eight educational regions plus the city of Lima. These regions are themselves divided into educational zones: between 2 and 6 depending on the region. Educational data are thus presented by region and by zone. The general administration of the country (and the collection of demographic data), on the other hand, is based on a series of 'departments' and, inside these, on provinces. But the boundaries of the educational regions and zones do not coincide with those of the departments and provinces. The first educational region, for example, encompasses the departments of Labayeque, Piura, Tumbes, Amazonas and *part* of the department of Cajamarca (the provinces of Chota, Cutervo, Santa Cruz, Jaen and San Ignacio, to be precise).

This first educational region is itself divided into five zones. When we reach this level, things become more complicated still. The first zone, for example, includes the *department* of Lambayeque, two *provinces* of the department of Cajamarca and six *districts* from a third province in the department (see Map 3).

To obtain the population for each educational zone, therefore, it is necessary to descend to district level. This may well be possible for the years in which censuses were taken, as these would supply population data for each district. For population projections in the intervening years, on the other hand, data are available only at the departmental level. For certain departments, provincial-level projections may be found, but never for the district-level. This means that to obtain an indicator as ordinary as a school enrolment rate for each zone one is obliged to make laborious adjustments and regrouping without being sure of arriving at a relatively precise estimate.

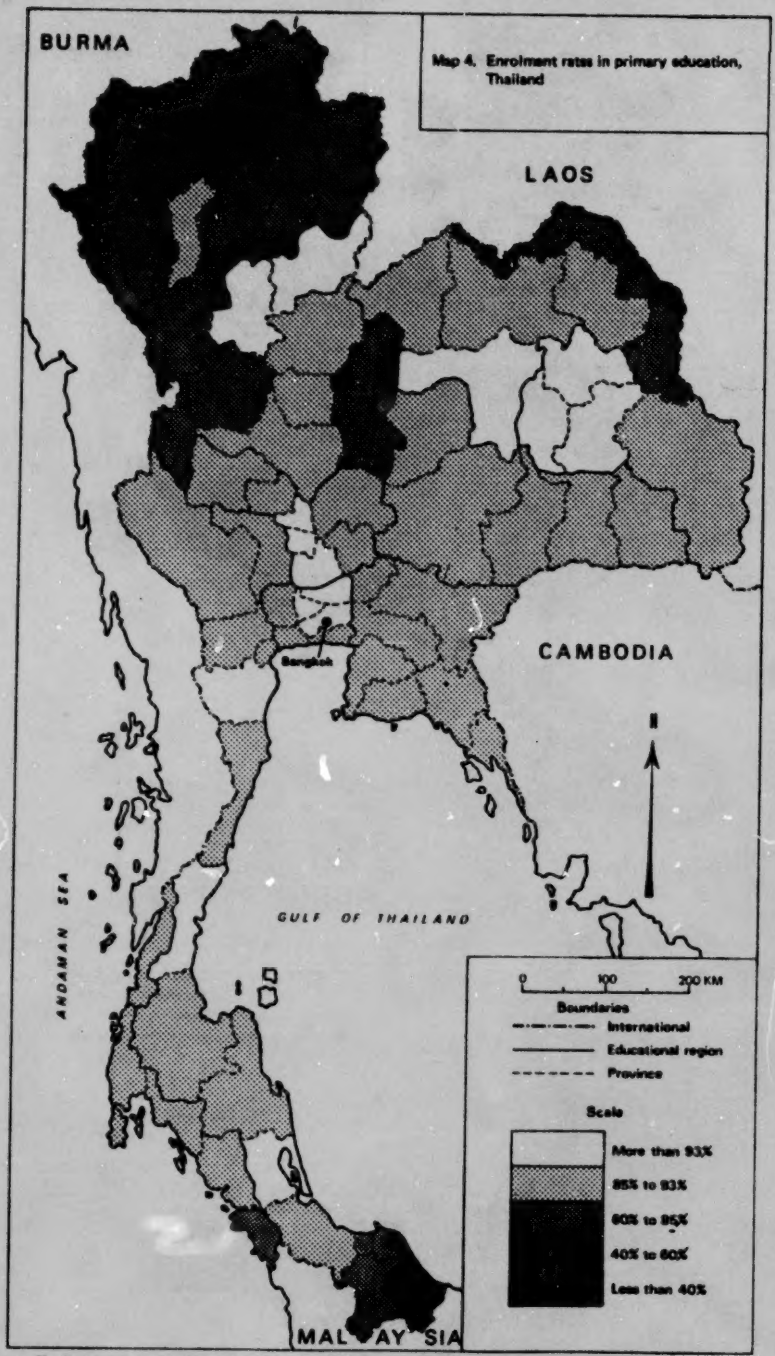
Different configurations depending on the variable

Another difficulty connected with the search for a geographical configuration of disparities is that this depends on the variable selected to measure them. It may alter as one moves from one variable to another. But educational development is a multi-dimensional process which may be described by a range of variables, some of them dealing with primary education, others with secondary education, or again with resources (for example, the percentage of qualified teachers) and yet others with performance (pupils' educational attainments, for example). We can produce a distinct configuration for each of these variables. So we are faced with the problem of deciding exactly what we want to measure or, which amounts to the same thing, the type of disparity we wish to demonstrate. In any case, however, it would be interesting to see how this configuration shifts when we replace one variable by another.



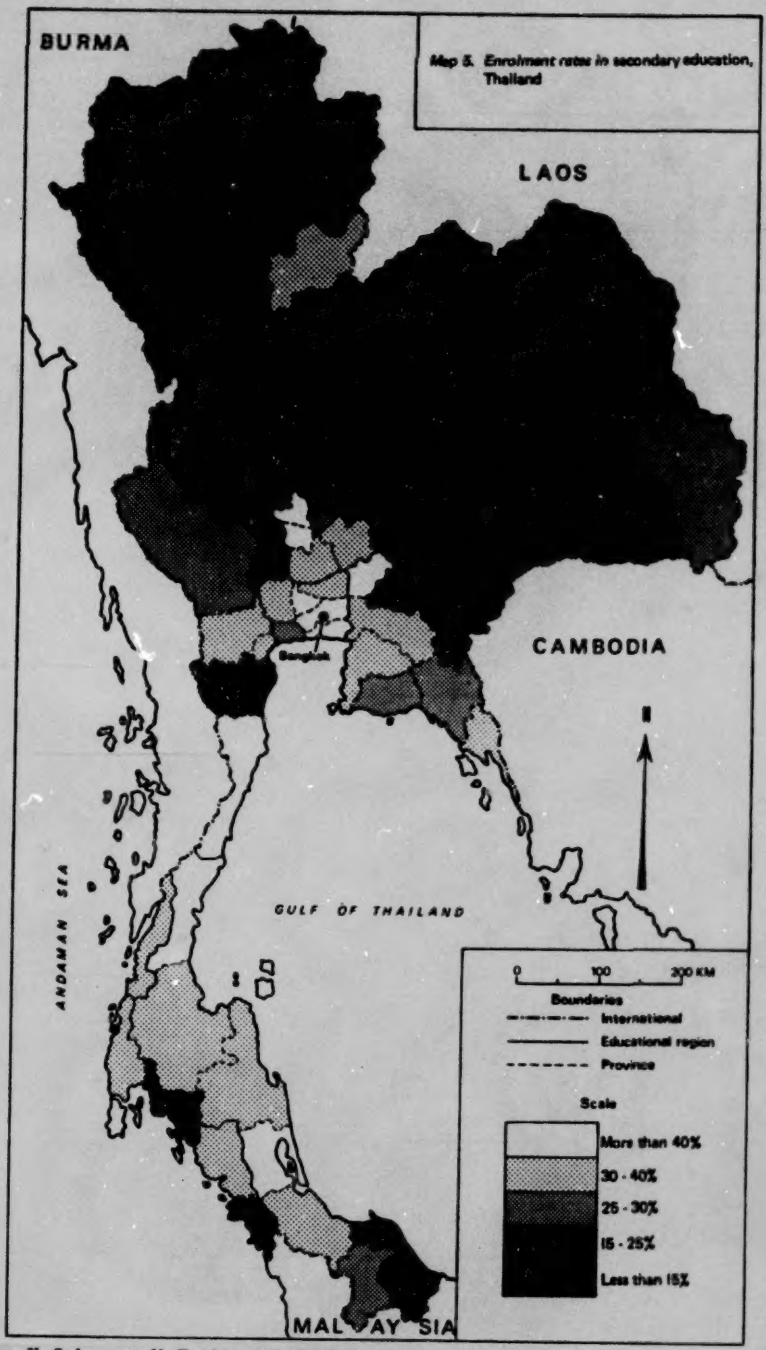
MAP 3. *Peru: the first educational region and its five zones, and the boundaries of departments and provinces.*

If we now take another look at Thailand, we find that a comparison of the map of disparities in access to primary education with that of disparities in access to secondary education is particularly instructive (see Maps 4 and 5). In primary education, there are differences between the provinces, but these differences are small as many of the provinces have already achieved high levels of access. In secondary education, on the other hand, the differences are much greater; what is more, imbalances between centre and periphery stand out much more sharply.



Map 4. Enrolment rates in primary education, Thailand

SOURCE K. Sudaprasert, V. Tunsiri and C. Ta Ngoc, op. cit., p. 219.



Map 5. *Enrolment rates in* secondary education, Thailand

SOURCE K. Sudaprasert, V. Tunsiri and C. Ta Ngoc, op. cit., p. 234.

Complications introduced by migration

As soon as population migrations reach certain proportions they are liable to introduce serious distortions into comparisons of educational situations in the different territorial units, and to mislead us as the real extent of disparities. Here we must take into account not only global migratory movements but also—and especially—those that are educational in origin. These can be quite considerable: migration from rural to urban areas in order to attend secondary school, or migration from one province to another or to the capital in order to attend higher education.

One way of identifying these migratory movements is to compare parents' place of residence with their children's place of study.[1] This is what has been done in Table 1, which looks at new admissions to the universities in Bangkok and to provincial universities.

Most of Thailand's universities are in Bangkok, and at present there are only three in the provinces: Chiangmai in the North, Khon Kaen in the North-East, and Songkla in the South. Hardly surprisingly, therefore, there is a heavy migration of students from the provinces in the direction of Bangkok. 43.6 percent of students newly-admitted to the universities of Bangkok have parents living in other regions. It is worth pointing out, though, that equally considerable numbers of students leave Bangkok to study in the provinces. At the University of Chiangmai, for instance, 31 per cent of new admissions came in fact from Bangkok, a higher proportion than for students from the North admitted to this same university. In other words, migrations of students follow complex patterns: from all the provinces to Bangkok and to the provincial universities, and also from Bangkok to the provincial universities (see Table 1 and Map 6).

Needless to say, educational migration does not occur only in higher education. It occurs at other levels too. Taking once again as our base the records of freshman students at Thai universities, Table 2 summarises the data concerning the place where these students attended the first and second cycles of their secondary education.

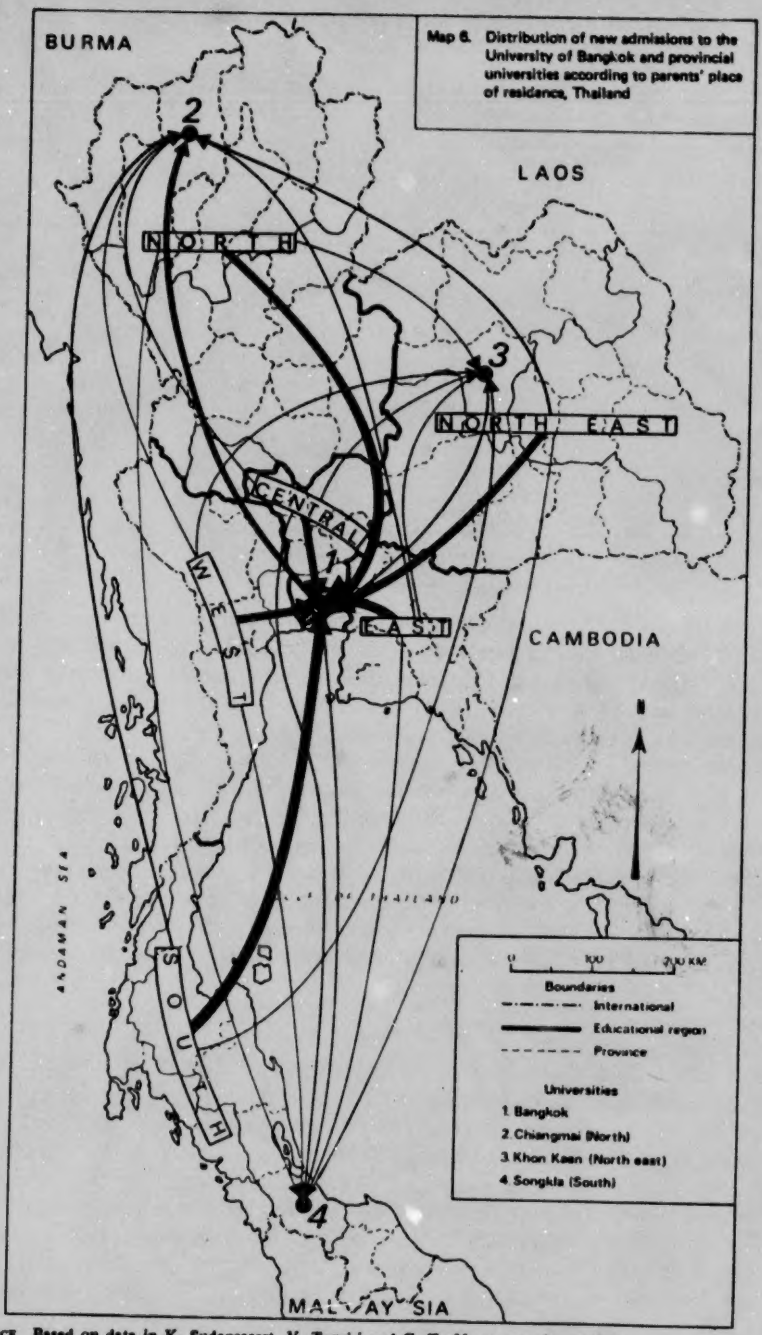
Figures in italic refer to students who attended both cycles in the *same region*. The other figures show the relative scale of migratory movements. It is interesting, in this respect, to compare Bangkok with the North-East region. Only a negligible proportion (2.5 per cent) of students who attended lower-secondary school in Bangkok left that city to continue their upper-secondary education.[2] On the other hand, a substantial proportion (28.6 per cent) of students who attended lower-secondary school in other regions came to Bangkok

1. This is an indirect way of identifying migratory movements. It may lead to an underestimation of migration, when the parents themselves emigrate for the sake of their children's education. Inversely, it may also be the case that some young people, who emigrate in the first place in search of employment, then take advantage of the proximity of a university to their new place of residence to pursue their studies.
2. These are most probably children who emigrated with their parents, for reasons other than educational.

TABLE 1. Distribution of students in the universities of Bangkok and in the provincial universities according to the place of residence of their parents

Place of residence of parents	Bangkok universities		Provincial universities						Total	
			Chiengmai (North)		Khon Kaen (North-East)		Songkla (South)			
	Number	%	Number	%	Number	%	Number	%	Number	%
Bangkok	4 126	56.4	488	31.0	92	18.1	72	17.7	4 778	48.8
Centre	413	5.6	94	6.0	46	9.1	17	4.2	570	5.8
East	576	7.9	113	7.2	38	7.6	23	5.7	750	7.7
West	511	7.0	108	6.9	58	11.4	24	6.0	701	7.2
North	527	7.2	446	28.4	55	10.8	35	8.7	1 063	10.8
North-East	407	5.6	126	8.0	169	33.4	12	2.5	714	7.4
South	758	10.3	196	12.4	48	9.6	223	55.0	1 224	12.5
Total	7 318	100.0	1 570	100.0	506	100.0	406	100.0	9 800	100.0

SOURCE Based on data in K. Sudaprasert, V. Tunsiri and C. Ta Ngoc, op. cit., p. 292.



Map 6. Distribution of new admissions to the University of Bangkok and provincial universities according to parents' place of residence, Thailand

SOURCE Based on data in K. Sudaprasert, V. Tunsiri and C. Ta Ngoc, op. cit., p. 240.

TABLE 2. Distribution of successful candidates admitted to University according to the region where they received their lower- and upper-secondary education

Upper secondary	Lower-secondary									
	Metro-politan	Central	North	North-East	South	East	West	Abroad	Un-known	Total
Metropolitan	*5 668*	525	295	276	540	397	329	—	211	7 941
Central	118	*236*	17	14	37	15	18	—	18	473
North	8	3	*638*	2	6	4	—	—	17	678
North-East	3	1	—	*284*	1	1	1	—	7	298
South	3	—	3	2	*524*	3	1	—	29	565
East	9	4	3	2	5	*272*	3	—	11	309
West	6	7	4	1	7	3	*286*	—	12	326
Abroad	—	—	—	—	2	—	—	*1*	—	3
Unknown	—	—	—	—	—	—	—	—	—	—
Total	5 815	776	960	581	1 122	695	638	1	305	10 593

SOURCE K. Sudaprasert, V. Tunsiri and C. Ta Ngoc, op. cit., p. 242.

to complete their secondary education. The situation is exactly the reverse in the North-East, where the proportion of students from this region who were obliged to leave the region to pursue their upper-secondary education came to 51.5 per cent (47.5 per cent moving to Bangkok to do so). On the other hand, only 4.6 per cent moved to the North-East for this purpose.

Owing to the extent of these migrations there is a risk of serious error creeping into calculations of access rates. Inasmuch, for example, as secondary schools are generally located in the towns, there is a risk of overestimating the rate of access to secondary education in the towns by relating total enrolments to the school-age population of the towns. To obtain more exact rates it would be preferable to examine the distribution of enrolments not in terms of the location of schools but rather of parents' place of residence. Unfortunately, while this kind of information is often available for higher education it is rarely so for the other levels.

An alternative approach

Taken by itself, this search for the configuration of disparities is instructive, but it scarcely goes beyond simple recording of differences. But educational disparities are merely one aspect of the wider problem of disparities, and it is tempting to inquire whether the configuration of educational disparities described above coincides or not with other types of region, be they geographical, cultural or economic, for example. It is here that the foregoing analysis meshes with an alternative approach, which is based on an implicit assumption concerning the relations between educational disparities and other regional characteristics. In this case, the criterion for the selection of regions for analysis is no longer one or more educational variables but some characteristic external to education.

The precise aim is to find out to what extent such regions coincide with different levels of educational development and thus yield a satisfactory explanatory framework. This was the approach used in the studies on Cameroon and Madagascar.

Here it is necessary to begin by grouping together the different base units according to the regional criteria selected, be they geographical or otherwise, and to calculate the average for the "region" thus defined. This grouping may involve some problems of adjustment owing to the fact that these analytical regions may not necessarily coincide precisely with the country's administrative divisions. The latter are likely to have been drawn up, and subsequently modified, in accordance with the demands of administrative and political management and control. In some cases they have deliberately been drawn up so as not to coincide with cultural, linguistic, or ethnic divisions in the population. In fact, these problems of adjustment are the same as those dealt with above in connexion with the compatibility of demographic with educational data.

Although for reasons of clarity these two approaches have been described separately, they are in fact closely interwoven. Both have the same purpose, in the final analysis, namely to arrive at a certain number of regions which are relatively homogeneous from an educational standpoint. The regions thus defined make it possible, on the one hand, to identify those requiring priority measures—a theme that will be dealt with in the last section of this book—and on the other hand to serve as a springboard for more detailed explanatory analysis of disparities.

There are of course serious limitations to simply comparing the central values characterizing relatively homogeneous regions. It does produce a description of the configuration of educational disparities, revealing an overall correlation between these disparities and differences of a geographical, cultural, economic or social character; but its explanatory power is limited. For a more satisfactory explanation of these disparities it is important to study in detail what happens inside each of these regions. It is in this sense that intra-regional analysis constitutes a useful, if not indispensable, complement to inter-regional comparisons.

C. Analysing intra-regional disparities

To conduct these analyses, the authors of the case studies have adopted two parallel approaches. The first concerns the relations between regional disparities and disparities between rural and urban areas and the second deals with the relations between regional disparities and social inequality.

Regional disparities and disparities between rural and urban areas

In analysing intra-regional disparities it is particularly important to examine those between rural and urban areas, as they reflect better than any other the inequalities in the supply of education. Indeed, the very way in which

this supply is organized is bound to favour the towns at the expense of rural communities. The higher we go up the academic ladder, the more teachers become specialized, the more curricula diversify and enrolment rates tend to fall. The first two characteristics affect the size of establishments if costs are to be kept at a reasonable level. The third increases the overall size of the population needed to justify the founding of a school. This organizational constraint is in itself sufficient to place towns in a privileged position *vis-à-vis* the countryside from the point of view of availability and accessibility of educational services. To this should be added the fact that, because of the general underdevelopment of rural areas, the human and material resources of schools in these areas are often very limited if not utterly inadequate.

Once again, the Thailand case study illustrates this point. In this country, not only do urban primary schools differ from rural ones, but they even belong to two separate networks: provincial schools, financed by the Ministry of the Interior, in the rural areas; Ministry of Education schools, municipal schools and private schools, in the towns. As can be seen from Table 3, the characteristics of the different types of schools vary enormously.

TABLE 3. Some characteristics of public lower-primary schools in rural and urban areas

	Rural areas	Urban areas	
	Provincial schools	Municipal schools	Ministry of Educ. schools
Average number of pupils per school	185	529	388
Number of pupils per teacher	32	31	25
Percentage of qualified teachers[1]	24.8	36.4	76.1

1. Only the teachers who have a Diploma in Education or a Bachelor's Degree in education (i.e. 2 years or 4 years of teacher training after completion of upper-secondary education) have been considered as being qualified.

SOURCE Based on data in K. Sudaprasert, V. Tunsiri and C. Ta Ngoc, op. cit., pp. 252, 304-5.

In general, rural schools are much smaller than the town ones: they have very few qualified teachers and a higher number of pupils per teacher than urban schools. It is interesting to note that the municipal schools, whose recruitment is among children from the poorer strata of the urban population, resemble rural schools more than the Ministry of Education schools.

As for relations between regional disparities and rural-urban disparities, we may look at these, for example, by examining the correlation between the rate of urbanization (i.e. the proportion of urban-dwellers to total population of each province) and different educational variables. In the case of Thailand, the correlation coefficients, calculated on the basis of 70 provinces, were as follows:[1]

1. See K. Sudaprasert, V. Tunsiri, and C. Ta Ngoc, op cit., pp. 256-257.

rate of access to lower-primary education	0.1425
rate of access to upper-primary education	0.5239
rate of access to lower-secondary education	0.7540
rate of access to upper-secondary education	0.8664
percentage of qualified teachers in primary education	0.8101

The correlation between the urbanization rate and the rate of access to lower-primary education is very low, because access to this level is practically universal and there are no longer any notable differences between urban and rural areas. On the other hand, the correlation grows stronger as one moves up the educational ladder. This is obviously accounted for by the fact that the supply of lower- and upper-secondary education is mainly concentrated in the towns. A strong correlation is also to be noted between urban population rates and the percentage of qualified teachers, resulting from the existence of separate school systems and the difficulty of recruiting qualified teachers prepared to go and teach in rural areas.

It is thus clear that many of the disparities between regions coincide with some other form of disparity, such as urban/rural disparities in particular. This observation made with reference to Thailand is valid for other countries also.[1] The extent of the gap between town and country in the field of education is doubtless due to the way the school system is organized, but it also—and most of all—reflects the impact of deeper, more general imbalances in levels of development and living conditions between the urban centres and the rural periphery.

Although educational disparities between urban and rural areas are substantial and their reduction is regarded—in declarations of intent at any rate—as a major objective, we still lack detailed analyses of these disparities. Frequently, data are unavailable because they have not been broken down in terms of urban/rural differences. What is more, analysis is complicated by the fact of migratory movements, as described above (pages 27-30).

In any case, a purely dichotomic analysis could turn out rather unsatisfactory from several points of view. To begin with, the distinction between urban and rural areas may vary from one country to the next. In certain cases, the criterion used is simply the size of the population of a given settlement (set at more or less arbitrary limits). In others, the definition will be of a legal type: only settlements that have been officially recognized as towns are considered as such.

These two types of division do not necessarily coincide, needless to say. In Hungary, for example, where before 1971 the only distinction made been towns and villages was the legal one, the breakdown of these settlements according to the number of inhabitants was as shown in Table 4.

1. For Madagascar, see P. Hugon, op. cit., p. 155, and for Cameroon, see J.-Y. Martin, op. cit., pp. 75-78.

TABLE 4. Relation between urban status and the size of settlements, Hungary, 1970

Size of the settlement	Number of settlements			Villages as percentages of total
	Towns	Villages	Total	
Over 50 000	15	—	15	0
20-49 000	38	1	39	2
10-19 999	28	48	76	63
5-9 999	2	152	154	99
Under 5 000	—	2 899	2 899	100
Total	83	3 100	3 183	97

SOURCE Z. Ferge, E. Havasi and J. Szalai, op. cit., p. 184.

There was thus one 'village' with a population of over 20,000 and two 'towns' with populations of between 5,000 and 10,000. It is only when one comes down to the under-5,000 category that one finds villages only.

Owing to the relatively arbitrary character of the distinction, and to the fact that it distinguishes only two categories (town or country), we find a very great variety of types of settlement under the heading 'town', from national capital to small provincial town; while 'rural' can mean anything from a rural centre to the remotest hamlet.

Further, like all dichotomic analyses, one based on the distinction between town and country yields oppositions rather than nuances. This is why it is preferable to employ a more refined classification distinguishing between different types of urban and rural centre, based on appropriate criteria. This is what Hungary's regional planners have sought to do since 1971, by distinguishing five main categories of population settlement (Table 5):

— Budapest and its suburbs (1)
— Major regional centres (23)
— Regional centres of lesser importance (106)
— Local centres (972)
— Other settlements (2,073).

This new classification coincides only very partially with the earlier distinction between town and village. Clearly, not a single village falls into the category of major regional centre; 49 of them, however, are classified as regional centres of lesser importance. Moreover, the Budapest suburban area is basically composed of 42 villages, but these 'villages' are of a very specific nature.

As the authors point out: "The targets of regional development plans are defined for settlements classified on the basis of their central or local rôles. Data about the implementation of plans to reduce regional disparities are more informative if presented according to this classification."[1]

1. Z. Ferge, E. Havasi, J. Szalai, op. cit., p. 185.

TABLE 5. Distribution of the types of settlement according to the classification town/village

	Towns	Villages	Total
Budapest	1	—	1
Conurbation around Budapest	2	42	44
Regional centres of high importance	23	—	23
Regional centres of middle importance	57	49	106
Local centres	—	972	972
Other settlements	—	2 037	2 037
Total	83	3 100	3 183

SOURCE Z. Ferge, E. Havasi and J. Szalai, op. cit., p. 184.

Spatial disparities and social inequalities

Looking beyond the analysis of spatial inequalities, whether regional or of the urban-rural type, it is interesting to examine their relations with social inequality. By analysing these we may glimpse further into the relations between the educational service and its clientèles. If we hold the spatial factor constant we eliminate the main objective constraint in the organization of educational services, namely distance. It then becomes possible to examine how the different population groups stand in relation to a service that is supposed to be spatially uniform.

In principle this type of analysis may be based on many different social criteria: socio-economic status, language, ethnic group, religion, etc. In practice, case-studies have tended to focus mainly on inequalities between socio-economic categories, for one very obvious reason: they lie at the heart of the problem of inequality in so far as they are more closely bound up than any other factor with the process of economic development and the mechanisms of social differentiation and reproduction.

It transpires from these analyses that in many countries educational services of different qualities correspond to different clientèles. This situation can only serve to reinforce existing inequalities stemming from the family background of pupils. The disparities between municipal and Ministry of Education schools in the cities of Thailand, mentioned above, are a striking example of this state of affairs. In Kenya, D. Court and K. Kinyanjui mention the existence of three types of primary school which, in the colonial era, were frequented respectively by Africans, Asians and Europeans. Although the rules of racial selection have ceased to operate today, these schools, whose quality varies greatly, continue to be attended by different clientèles, in so far as access to Category C school (formerly reserved for Europeans) depends on the payment of high fees and knowledge of English.[1] In his study on Madagascar, P. Hugon mentions the results of a survey conducted in 1971 to examine the social back-

1. D. Court and K. Kinyanjui, op. cit., pp. 349-353.

ground of Fourth Form (*Classe de 3e*) pupils, drawing a distinction between *lycées* and *collèges d'enseignement général*,[1] two types of schools of unequal quality and not offering comparable opportunities of pursuing studies through to the end of the secondary system. In the *lycées* the transfer to the second cycle is practically automatic, which is by no means the case in the *collèges d'enseignement général*. As can be seen from Table 6,

> There were marked differences in social origin between *collèges d'enseignement général (CEG)* and *lycées*. Country children represented 41 per cent of *CEG* enrolments, but only 13.6 per cent of *lycée* enrolments, for a national average of 26.8 per cent. Children of senior and middle executive groups represented 18.6 per cent of *CEG* enrolments and 40.5 per cent of *lycée* enrolments. The two school paths reproduce social stratification and lead to an intensification of inequalities in the second cycle (upper-secondary) owing to the barrier for *CEG* children in moving up to the *classe de seconde*.[2]

TABLE 6. Origin of *classe de troisième* (fourth form) pupils

	State CEG	Lycées
Senior executive and above	3.9	14.0
Middle executive	14.7	26.5
White-collar workers	10.6	16.8
Farmers	41.0	13.6
Trade	4.4	6.7
Other, non-wage-earning	2.2	1.4
Craftsmen	4.8	6.9
Miscellaneous - not workers	18.4	14.9
Total	100.0	100.0

SOURCE P. Hugon, op. cit., p. 184.

Another observation we may make is that, even if children of different backgrounds do attend the same schools, the effects are not the same for the different types of clientèle. Table 7, taken from the study on Hungary, shows the educational achievement scores of pupils in primary schools and provides a good illustration of this observation. This country has made special efforts to achieve greater equality in the accessibility and quality of education throughout the nation. In consequence, for a given socio-economic category, results differ little between village and town. The gaps between the different socio-economic categories, on the other hand, still persist in both situations.

1. The *collège d'enseignement général* gives a lower-secondary education only, whereas the *lycée* provides both lower- and upper-secondary education.
2. P. Hugon, op. cit., pp. 183-184.

TABLE 7. Achievement scores of children from different social backgrounds in primary schools, Hungary, 1968[1]

Socio-economic group of head of household (father)	Towns, including Budapest	Villages	Towns as percentage of villages
Highly qualified leaders, managers	5.38	5.54	97
Professionals	5.54	4.83	115
Other leaders, managers	4.72	4.47	106
Other non-manuals	4.45	4.00	111
Foremen	4.49	4.49	100
Skilled workers (all sectors)	4.29	3.76	114
Semi-skilled and unskilled workers (all sectors)	3.61	3.48	104
No. of children in sample	2 286	2 864	

1. Achievement scores ranged from 1 (the lowest) to 9 (the highest).
SOURCE Z. Ferge, E. Havasi and J. Szalai, op. cit., 225.

It is also interesting to note that the inequalities between town and country once more become significant in higher education, where, for obvious reasons, it is difficult to equalize opportunities of access for every population settlement. An analysis of participation rates at this level of education reveals not only considerable gaps between different socio-economic categories—particularly between manual and intellectual workers—but also that, for any given category, the fact of living in the country constitutes a handicap, at least for the categories at either end of the scale: executives and unskilled labourers (Table 8).

TABLE 8. Percentage of 19-21 year olds and of 22-24 year olds enrolled in higher education, according to father's socio-economic status

Socio-economic group of head of household (father)	Among the 19-21 years old				Among the 22-24 years old			
	Budapest	Other towns	Villages	All	Budapest	Other towns	Villages	All
Leaders, professionals	30	26	19	25	14	15	8	13
Other non-manuals	5	9	7	7	9	6	4	6
Workers excluding agriculture								
Skilled	5	4	4	4	1	2	1	1
Semi-skilled	1	4	3	3	5	2	1	1
Unskilled	5	4	3	3	—	1	1	1
Agricultural workers	—	1	3	3	—	—	1	1
All	13	9	4	7	7	5	2	4

SOURCE Z. Ferge, E. Havasi and J. Szalai, op. cit., p. 227.

These few data about an industrial country that has for several decades pursued a policy of general equalization give a fairly accurate idea of the possibilities and the limitations of a policy to reduce spatial inequalities. Such policies may make an impact on inequalities where these are the outcome of problems of organization and quality in the education service. But they can scarcely make up for inequalities whose source lies in the economic and socio-cultural situation of the family and is intimately bound up with the social division of labour. Reducing this type of inequality calls for other measures whose scope transcends that of action upon the education service and concerns more general policy affecting the organization of society as a whole.

Given the paramount importance of differences of a socio-economic character in the development and reproduction of inequalities, their examination is an essential part of intra-regional analysis as described above.

II. Measuring disparities

In many countries detailed measurement of regional disparities in the educational sphere is complicated by the inadequacy of the statistical data base on education and by the absence of a general framework within which to identify the indicators most relevant to analysis of these disparities.

Even so, by using generally available data we can analyse a number of interesting phenomena, such as the way regional disparities evolve in time, and their relationship with other disparities in economic and social development.

In the section that follows we shall begin by reviewing the different indicators generally used in case studies, and the types of analysis conducted by their authors with the aid of these indicators. We shall suggest a classification of the indicators that need to be developed in order to pursue this analysis further.

A. The statistical data base

As in most social sectors, the educational data base was initially conceived in response to the immediate needs of day-to-day administration, or else to illustrate progress being made in the development of schooling and the performance of the education system. The concern to link statistics more explicitly and more systematically to planning and strategic management needs is a relatively recent one, as witnessed by the growing number of publications emerging from the international organizations, among others.[1] However, discussion of rationalization of traditional school statistics and attempts at

1. For an inventory of the studies on indicators of development, prepared by the various international organizations, see M. V. S. Rao *et al., Indicators of human and social development*, UN University, 1977 (pre-publication paper).
Dealing specifically with the educational sector are: R. A. Carr-Hill, *A system of educational indicators with specific reference to developing countries*, Paris, Unesco/EPP, 1977; J. N. Johnstone, *Indicators of education systems*, London, Kogan Page/Paris, Unesco: IIEP, 1981; OECD, *Indicators of performance of educational systems*, Paris, OECD, 1973; OECD, *A framework of educational indicators to guide government decisions*, Paris, OECD, 1973; and ETS, *Educational indicators: monitoring the state of education*, Princeton, N. J., Educational Testing Service, 1975.

developing a systematic approach to the development of indicators are still in their early stages.

In practice, as can be seen from analysis of the statistical bulletins published by various countries, data are confined to the external aspects of the educational process, i.e. to the most apparent, most easily-measured aspects. *School statistics, in consequence, by no means encompass every aspect of the school system in reality.*

Generally speaking, fairly detailed data are available on pupil's characteristics, on the qualifications of the teaching corps and on the number of classrooms. We can also obtain figures on expenditures, although these are less exhaustive and less detailed. But information on other equally important aspects, such as the condition of school buildings, the availability, quality and use of teaching aids (including textbooks), are much harder to come by, as is any systematic measurement of the results of the educational process.

In these circumstances, it is difficult to form a precise idea, in most countries, of disparities in education and still less of the disparities in school results that could be attributed to this same education service, and of the resulting social inequalities.

In a study of regional disparities, the problem is further complicated by the fact that, traditionally, *statistics are collected for the purposes of national, centralized administration.* It is therefore more important to know what are the national averages, rather than the distribution around these averages or the disparities existing between regions and social groups. Inasmuch as classical planning amounts to "planning of averages", data collection and processing methods are far more concerned with aggregate data than with their breakdown. In other words, even though the unit for the collection of data is generally the class or school, in consequence of which the original data are presented in their atomised form, the wealth of local data is lost in the different consolidatory stages through which they pass and in their final processing, so much so that at the end it is often hard to unravel the consolidated data. What the study of disparities involves, then, is not merely a broadening of the scope of the census and/or surveys, but also a change in perspective in data-gathering and processing methods.

A third problem stems from the *poor quality of information.* In many countries (and not only in the developing countries), school statistics are of dubious reliability, and we have no means of estimating probable margins of error. There are several reasons for this situation. One, and probably the most important, is organizational. Collecting educational data is a complex business, one that often exceeds the capabilities of local statistical units. There is a worrying paradox in this connexion.[1] To collect their information, statisticians make use of intermediaries in the person of the schoolteachers, headmasters and sometimes inspectors. None of these officials thinks of him- (or

1. L. Goldstone, "Educational statistics for developing countries", in *Prospects*, Paris, Unesco, Vol. V, No. 2, 1975.

her-) self as a statistician, and filling out questionnaires is resented as a tedious chore of not immediately perceptible utility.

Further, being personally involved in education development, these officials may have reason to supply misleading information: fear of closure of a class if there are not enough pupils, the hope of higher subsidies if the means at one's disposal are indequate, etc.

All the case studies suffer from this lack of an adequate data base. Certain types of analysis that might have proved revealing have had to be neglected, while others have been conducted with indicators that are no more than approximations of what we really want to measure. In the following section we shall comment briefly on the different types of indicators commonly used, discussing problems of interpretation arising with each.

B. Commonly-used indicators

Indicators easily obtained from data furnished by school censuses can be classified in three broad categories: indicators that tell us about the degree of expansion of the education system; those that tell us about its efficiency; and those measuring the resources available to the system.

1. Quantitative expansion of the education system

The enrolment rate is the most readily available indicator for measuring the degree of quantitative expansion of the education system. This is consequently the indicator that most commonly occurs in studies of regional disparities. It is useful above all because it gives us a direct and quick idea of the extent of schooling in the different regions. But one should not lose sight of its extremely global character, which makes interpretation tricky, for it combines the results of three distinct phenomena, namely admissions, repetitions and drop-outs. If, as is often the case, one uses the apparent enrolment rate (i.e., the ratio between total enrolments in a given educational level and the population in the age-group officially corresponding to that level), a high proportion of repeaters will swell enrolments and thereby increase this rate. Moreover, a region with a very broad admission base but with a large proportion of drop-outs may have the same enrolment rate as a region in which the admission base is narrow but there is a higher degree of retention. This is why it is often preferable to measure separately disparities in admissions and those in the efficiency of the school system (repetition and drop-out).

In calculating *admission rates*, the problem is to find out what proportion of children in a given cohort (i.e., all children born in the same year) in a given region is admitted to the first year of studies in the level of education being considered. Calculating this proportion is complicated in many countries by the frequency of early or late admissions, which occur either before or after the age laid down by the school admissions regulation. To calculate admission rates on the basis of an actual cohort, we would have to be able to trace it without break for several years in order to count all those of its members that have

gained admission whether early, belatedly or otherwise in each year. Although certain countries have experimented with methods of identifying cohorts,[1] these experiments have not yet been generally applied, and in most countries the information required to calculate these rates is not available.

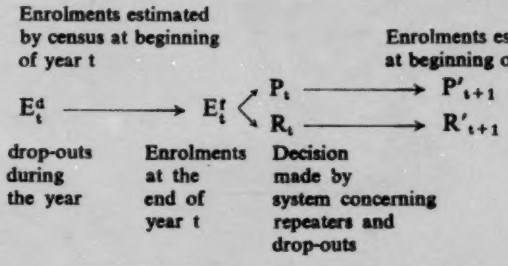
Some countries do supply figures showing the breakdown of new admissions by age, and where this kind of information is available for several consecutive years, it becomes possible to reconstitute *admission rates for a cohort* on the basis of the rates of admission by age.[2]

Most of the time, though, we have no information as to the breakdown by age of new admissions. Consequently, it is not possible to calculate the rate of admission by age. In order to reconstitute the rate of admission by cohort, we are thus obliged to make do with the apparent rate of admission, which relates the total number of admissions, regardless of age, to the official age of admission. This obviously leads us to overestimate the real rate of admission, because of the importance of early and late admissions. In many cases, the rate of admission thus calculated exceeds 100 per cent even though admission is not yet universal. As late admissions are more likely to occur in the rural areas than in the urban centres, the risk of overestimation affects above all deprived areas.

2. The efficiency of the education service

The most commonly used indicators for measuring the efficiency of the education service are promotion, repetition and drop-out rates. These three rates are in fact closely inter-related and should inform us about pupils' progress through the school system to which they have been admitted.

Here again, the difficulty lies in the fact that the data normally available and the methods generally applied do not totally dissipate ambiguity in calculating these rates. What in fact happens is that we try to deduce these three rates by comparing total enrolments for two consecutive years and taking the number of repeaters into account. Broadly speaking, the calculation takes the following form:


Enrolments estimated by census at beginning of year t
Enrolments estimated by census at beginning of year t + 1
E_t^d
E_t^f
P_t
R_t
P'_{t+1}
R'_{t+1}
drop-outs during the year
Enrolments at the end of year t
Decision made by system concerning repeaters and drop-outs

1. See: Office of Statistics, *Les méthodes de codification des effectifs scolaires*, Paris, Unesco, Juillet, 1979.
2. Ta Ngoc Châu, *Population growth and costs of education in developing countries*, Paris, Unesco: IIEP, 1972.

At the end of the year, enrolments E_t^f may be less than E_t^d owing to drop-outs in mid-year, and this constitutes a *first category of drop-outs*. Out of the enrolments E_t^f still in school at the end of the year, the system decides to promote P_t to the class above and that R_t shall repeat the year. In the next year, however, we are not going to find P_t in the class above but P'_{t+1}, and the difference $(P_t - P'_{t+1})$ represents a *second category of drop-outs*, those dropping out even though they could have been promoted normally. Similarly, we find not R_t but R'_{t+1}, and the difference $(R_t - R'_{t+1})$ constitutes a *third category of drop-outs*, those who drop out because obliged to repeat.

Migration phenomena complicate the problem even more. A certain number of children may leave the region. They are thus considered as drop-outs, although in fact it may be that they have enrolled in a school in another region. Inversely, the enrolment figures of a region may be swollen by the influx of children from other regions. Insofar as the extent of such movements is not known, there is a tendency to overestimate the number of drop-outs in rural areas (due to families leaving the area and the probable enrolment of their children in urban schools) and to underestimate drop-outs in urban areas (because the number of actual drop-outs is compensated for by the enrolment of children coming from rural areas).[1]

The only figures available to us through annual census data are E_t^d , P'_{t+1}. And we calculate drop-outs as follows: $A = E_t^d - (P'_{t+1} - R'_{t+1})$.

Now, as we have just seen, drop-outs may in fact be broken into relatively different categories and their measurement is distorted by migratory movements.

What makes interpretation even more difficult is that the ratio $\frac{P'_{t+1}}{E_t^d}$ is regarded as the promotion rate and the ratio $\frac{R'_{t+1}}{E_t^d}$ as the repetition rate.

Inasmuch as R'_{t+1} is less than R_t, the fact that the repetition rate $\frac{R'_{t+1}}{E_t^d}$ is low does not necessarily imply that only a small number of pupils are repeating. It may also signify that a high proportion of those asked to repeat prefer to drop out. The repetition rate as usually calculated therefore does not constitute a reliable indicator for comparisons of situations in different regions of a country. For instance, it may be that repetition rates are higher in an area well served by the school network than in a less privileged area. This does not mean that only a small proportion of children are obliged to repeat in this less privileged area; it could simply mean that those who are obliged to repeat in this area give up easily whereas, in the area with a better network, they prefer to persevere.

As the fact of repeating a year is essentially experienced as a *failure*, the ratio $\frac{R_t}{E_t^f}$ (proportion of children obliged by the system to repeat a year) is more significant than the repetition rate.

1. We shall return to this problem later on (see below, pp. 44-45).

Just as there is a gap between R_t and R'_{t+1}, there may also be a gap between P_t and P'_{t+1}, as is demonstrated in a study by Isabelle Deblé on Brazil.[1] The gap $(P_t - P'_{t+1})$ cannot be analysed in the same way as the gap $(R_t - R'_{t+1})$. Whereas $(R_t - R'_{t+1})$ represents pupils having dropped out due to discouragement by their academic failure, $(P_t - P'_{t+1})$ may represent pupils who, although promoted, fail to find a place in the class above owing to a shortage of places. This is the explanation put forward by Isabelle Deblé. P'_{t+1} therefore represents the actual number of pupils promoted, and $\frac{P'_{t+1}}{E^a_t}$ the objective probability of a pupil's being promoted.

We may thus distinguish two indicators of inequality in promotion: the first, $\frac{P_t}{E^f_t}$ is connected with academic success and gives the proportion of pupils successfully completing a given class and considered fit for promotion; the second, $\frac{P'_{t-1}}{E^f_t}$ gives the proportion of pupils actually admitted to the class above and depends also on the way the school system is organized and on the geographical distribution of available places.

Another type of indicator which in fact sums up the combined effect of drop-outs and repetitions over several years of studies is the *retention rate*. This seeks to determine the probability for a member of a given cohort of getting through all the classes of a given cycle and of completing it. Since the information currently available is scarcely sufficient for us to trace a real cohort, we generally have to construct fictitious ones, stationary ones most of the time.[2] The principal weakness in the reconstruction of these cohorts stems from the fact that one is obliged to rely on average promotion, repetition and drop-out rates.

Leaving aside the above-mentioned remarks concerning the calculation of rates, reconstructing fictitious cohorts implies, on the one hand, that the same rate applies regardless of the number of previous repetitions, and, on the other hand, that the number of repetitions is—theoretically—unlimited. Although frequently used, retention rates derived from the reconstruction of fictitious cohorts cannot be held to give an exact picture of the real situation.

What is more, since drop-out rates are calculated by comparing enrolments for two consecutive years, children who emigrate from the country to the town are considered as drop-outs even if they have not left the school system. Where migration from the countryside into the towns takes place on a large scale, applying the fictitious age-group method tends to underestimate retention rates in the countryside and to overestimate them in the towns. This may

1. I. Deblé, "Les déperditions d'effectifs dans le Tiers Monde et ses ambiguïtés", *Tiers monde*, Paris, IEDES, juillet/décembre 1974, Vol. XV, Nos. 59-60, p. 562.
2. For a presentation of the method of fictitious cohorts, see: D. Blot, "The problem of wastage in Argentine education: theoretical analysis and application" in OECD, *Education, human resources and development in Argentina*, Paris, OECD, 1968, Vol. II, pp. 65-116; I.B.E., *A statistical study of wastage at school: a study prepared for IBE by the Unesco Office of Statistics*, Geneva, IBE, 1972; and A. Lemay, *Les cohortes fictives dans l'analyse du rendement scolaire*, Paris, Université de Vincennes, 1978.

account for the considerable difference between rates calculated in this way for urban and rural areas, as in Colombia, for instance.[1]

3. Resources available for education

This heading covers a series of indicators which in one way or another measure the human, material and financial resources available for the education service. These indicators are of interest because they are often used as proxy and indirect measures of the quality of the educational service, on the implicit assumption that quality depends on the amount of resources allocated.

Where teacher resources are concerned, the two most commonly used indicators are the *pupil/teacher* ratio and the *percentage of qualified teachers.* The chief merit of these yardsticks is that they are easy to work out on the basis of existing data. The problem is to what extent they can be regarded as indicative of the quality of the service on offer. Does a teacher's quality depend on the length of his training, or on the category to which he belongs? What determines the quality of a teacher? Is a rural school with few pupils for every teacher better than a town school with more? The answers to these questions are by no means evident, and we shall be returning to this subject later.[2]

Indicators of the availability, condition and use made of material resources are rarely employed in the studies for this project, quite simply because precise data on buildings and equipment are often non-existent. For this reason, in certain cases indirect indicators have been brought in to give a general idea of material resources available to different types of school.

Schools may for example be classified in terms of the *authorities administering them* when we know that there are considerable differences between the means available to the different networks.[3] Again, we may classify them by *size of schools,* assuming implicitly that the larger schools are bound to have trained teachers, that they will be able to afford better equipment and that they can offer a wide range of options. This assumption is verifiable in practice; we may

1. See: Office of Statistics (Unesco), op. cit., pp. 80-81, which gives the following figures.

	Class					Pass in primary school certificate exam
	1	2	3	4	5	
Urban area	1 000	757	669	564	504	442
Rural area	1 000	508	143	71	39	34

2. See below, pp. 60-62.

3. In the case of Madagascar, P. Hugon, op. cit., pp. 135-136, makes a distinction at the primary-school level, between lower-primary schools, private primary schools and state primary schools, and, at the secondary-school level, between private *collèges d'enseignement général,* state *collèges d'enseignement général,* state and private *lycées.*

In the case of Kenya, D. Court and K. Kinyanjui, op. cit., pp. 349-352, distinguish between aided schools and *Harambee* schools and within the aided-school category, between Schedule C, Schedule B and Schedule A schools.

In the case of Thailand, K. Sudaprasert, V. Tunsiri and Ta Ngoc C., op. cit., pp. 251-254, distinguish between provincial schools, municipal schools and Ministry of Education schools.

observe, for instance, a strong correlation between the size of school and the results obtained by its pupils,[1] but this correlation may simply stem from the fact that the distribution of large schools and small coincides very broadly with their geographical location, town or country. This means that the size indicator in fact measures a good deal more than the simple difference in material resources.

To measure financial resources, the indicator most frequently used is that of *expenditure per pupil* (sometimes broken down into teaching staff, non-teaching staff and material expenditures), since this reveals disparities in the allocation of resources to the different regions. Attention often focuses on this indicator since it supplies information capable of being used directly to improve methods of budgetary allocation, which is an essential part of the planning process. Once again, though, it is of far more dubious value when used as an indirect indicator of educational quality. This is because teachers' salaries account for the greater part of total expenditure, with the result that average expenditure per pupil is mainly a function of the pupil/teacher ratio and of the qualifications and seniority of the teaching staff. As for non-wage expenditure per pupil, at least two implicit assumptions are made: that there is a direct, linear relation between the cost of equipment and the number of pupils, and that finance is allocated everywhere on the basis of a single logic. Yet none of these assumptions is really borne out in practice.

In conclusion, we may say that even if the traditional data base is far from ideal for diagnosing disparities satisfactorily, it does nevertheless permit the construction of a variety of indicators which, if used with caution, can be of help in a number of different and worthwhile analyses. In the following paragraphs we shall be taking a closer look at three types of analysis that seem to be among the most instructive for the purposes of planning.

C. Three types of analysis

The type of analysis one opts for obviously depends on the kind of study one wishes to make, in other words, the kind of questions one asks. For the planner concerned with reducing disparities, at least three types of question would seem particularly relevant: how have disparities evolved in the past? What are the current trends of disparities when comparing different levels of the education system? And lastly, how do disparities in education relate to disparities in development in general?

1. How disparities evolve in time.

What this essentially involves is comparing the situation at the beginning and at the end of a given period or series of periods. The number and length of periods to be examined obviously depends on the evolution of the country concerned and on available information. There is, moreover, a multitude of

1. Office of the National Education Commission, *Factors affecting scholastic achievement of primary school pupils*, Bangkok, 1979, pp. 41-44.

variables capable of describing an education "situation", and it is necessary to choose, from among the possible variables, those most relevant to the type of analysis one plans to undertake.

Having selected one's period and one's variables, one can adopt one of two possible approaches: the first is to compare the dispersion around the mean at the beginning and end of the period, and the second is to examine, for each region, the level attained at the beginning of the period and progress made during the period.

As will be seen from the examples given below, even if the question of the evolution of disparities seems simple at first sight, the answers may in fact vary from one level of the education system to the next: the reduction of disparities at one level may on occasion be accompanied by their aggravation at another. They may also vary according to whether one takes into account absolute deviations or relative ones, or according to whether or not one chooses to consider the pace of reduction.

(a) Comparing dispersion around the mean at start and end of period. The dispersion of regions around the national average may be taken as an indicator of the extent of disparities. By comparing this dispersion at the start and the end of the period, we can form an idea of the way these disparities have evolved. In order to make such a comparison, it is necessary for the measure of dispersion to take into account on the one hand the fact that the regions may be of varying importance and, on the other, that, during the period under study, the national average has changed. It is clear, however, that not all regions have the same numerical importance. The school-age population in a given region may far exceed that of another. It is necessary, therefore to *weight* the regions. The weighting factor used will depend on the variable selected. Thus, if the variable under study is the rate of transition from primary to secondary, then it is normal to use enrolment in the final grade of primary education as the weighting factor, since it is from this enrolment figure that transition rates will be derived.

Thus weighted, the standard deviation measures the dispersion around the mean. But this mean may itself vary sharply between the beginning and the end of the period, especially if the latter is relatively long. In order to take this variation of the mean into account, it is necessary to relate the standard deviation to the mean, i.e., to use the coefficient of variation,[1] which thus gives a relative measure of dispersion.

1. The equation for a weighted standard deviation is as follows:

$$\sigma = \sqrt{\frac{\Sigma f_i (x_i - \bar{x})^2}{\Sigma f_i}}$$

where f_i is the weighting coefficient
x_i is the value of the variable for each of the regions
$\bar{x}$ is the national mean.

The coefficient of variation is equal to : $c = \frac{\sigma}{\bar{x}}$

To illustrate the point, Table 9 gives the mean, the weighted standard deviation and the coefficient of variation for the rate of transition between lower and upper primary education in the 70 *changwads* (provinces) of Thailand between 1967 and 1976.

TABLE 9. Comparison of rates of transition from lower- to upper-primary education in 1967 and 1976

	1967	1976
National mean	35.2	56.9
Minimum	13.0	30.0
Maximum	82.0	99.8
Standard deviation	18.1	16.3
Coefficient of variation	.514	.286

Between 1967 and 1976, the transition rate between lower- and upper-primary education improved distinctly, from 35.2 per cent to 56.9 per cent. The dispersion of rates in the different *changwads* around the national mean declined, since the standard deviation itself declined. The coefficient of variation, which takes account of both the narrowing dispersion and the rising national mean, fell still further, showing that regional disparities relating to transition between lower- and upper-primary education in fact declined considerably.

(b) The relation between the level attained at the beginning of the period and progress achieved during the period. Instead of looking at the dispersion of different regions around the national mean, we may also examine the progress achieved by *each region* during the period under study. For disparities to disappear, the most deprived regions must progress more rapidly than the already privileged ones. To verify this, we may begin by comparing the value of the variable for each region at the beginning and end of the period. This is done in Figure 2, which shows the rate of transition in 1968 on its horizontal axis, and that for 1976 on its vertical axis. From the way the figure is constructed it is clear that a province whose transition rates in 1968 and 1976 are identical will be represented by a point lying on a diagonal line. In fact, all the points lie above this line, which means that all the provinces improved their transition rates. The vertical distance from the diagonal line represents the absolute improvement achieved by each province.

What is more, according to this graph, it seems as if the provinces in which the level was already high in 1968 progressed less rapidly than those where the level was low, which means that disparities are diminishing. One can check this by calculating the correlation coefficient between the absolute increase made by each province between 1968 and 1976 and its level in 1968. In the case that interests us, the correlation coefficient is -0.8562. In other words, the correlation between the two variables is negative and relatively strong, showing that

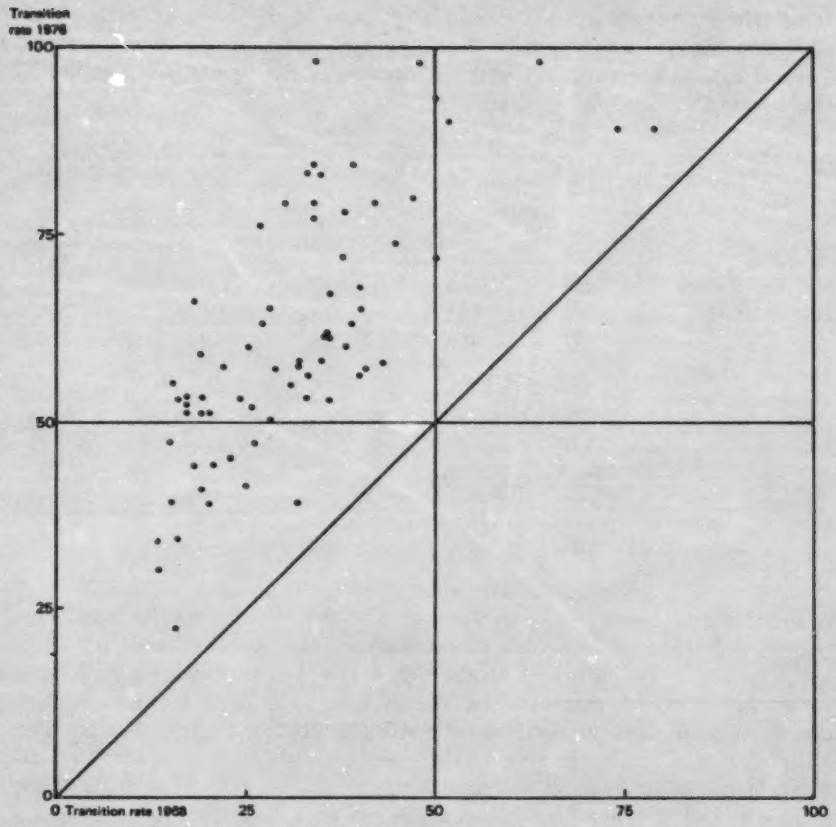


FIGURE 2. *Thailand: changes in the transition rate from lower- to upper-primary education, 1968 to 1976.*

SOURCE K. Sudaprasert, V. Tunsiri and C. Ta Ngoc, op. cit., p. 223.

it was the provinces that were least privileged in 1967 which tended to progress fastest. This was foreseeable to a certain extent, since in 1967 the most favoured provinces already had rates close to 100 per cent—beyond which point it is impossible to progress. The problem however is to find out whether reducing disparities at one level entails a corresponding reduction at the next level up or whether, on the contrary, disparities are merely displaced upwards from one level to the next.

2. How disparities evolve at different levels of the education system

It often happens that regional disparities deteriorate as one rises through the different levels of the education system. It is interesting, therefore, to compare the extent of disparities at these different levels. We may, as in the foregoing,

select relevant variables (such as admission rates to the different levels of the education system) and compare their dispersion around the national mean. To illustrate this approach, Table 10 presents some figures relating to the situation in Thailand's 70 provinces.

TABLE 10. Dispersion of the apparent admission rates[1] to the various educational levels in the 70 provinces of Thailand

	Lower primary	Upper primary	Lower secondary	Upper secondary
National average	88.5	51.3	27.6	6.4
Highest province	85.9	93.2	71.6	26.2
Lowest province	41.8	28.0	11.7	1.7
Standard deviation	7.167	15.473	11.654	4.711
Maximum/minimum	2.290	3.329	6.120	15.412
Coefficient of variation	.081	.302	.433	.736

1. $\frac{\text{New admissions to each level}}{\text{Population of the age corresponding to official admission age for cycle}}$

SOURCE K. Sudaprasert, V. Tunsiri and C. Ta Ngoc, op. cit., p. 236.

As is to be expected, admission rates fall rapidly in each succeeding level owing to the increasingly selective character of the system. At the same time, one finds that disparities widen considerably. The maximum/minimum ratio, which compares the province with the highest rate with the one with the lowest, serves as an initial guide to the extent of the gap. Thus, in lower-primary education, admission rates in the most privileged province are slightly more than twice what they are in the most deprived province. In upper-secondary education, on the other hand, it is fifteen times greater. Still, these are extreme situations, and to gain a precise idea of the extent of disparities for all 70 provinces, it is preferable to use the coefficient of variation. Here, too, we find that this coefficient rises rapidly (from 0.081 to 0.736), which shows to what extent disparities between provinces increase as one ascends the education system.

Another way of illustrating this phenomenon would be to compare the province's population as a proportion of the total population with its share of total enrolments at each level of the education system. Table 11 presents the relevant figures for Thailand.

The percentage of enrolment in the first cycle is very close to the percentage represented by the total population.[1] Admission to this cycle is more or less

1. With the exception of Bangkok. The authors of the study from which these data have been taken, explain the situation in the following way: "One may be surprised that the percentage of enrolment in lower primary in Bangkok is *lower* than the percentage of the total population. That does not necessarily mean that access to lower primary is lower in Bangkok than in the other regions. In fact, there are three reasons which may explain this. The first one is that Bangkok is a large city and its fertility rate is probably lower than in the rest of the country. The second is that Bangkok receives

TABLE 11. Percentage of total population and of enrolment in various levels of education

	Total population	Enrolment				Successful candidates for higher education
		Lower primary	Upper primary	Lower secondary	Upper secondary	
North-East	35.3	36.3	26.5	23.2	14.5	7.3
North	21.3	21.7	18.4	16.6	13.1	10.7
South	12.4	13.0	14.4	15.3	11.5	12.7
West	7.4	7.9	9.1	7.9	5.4	7.5
East	5.7	6.0	6.4	6.6	4.5	7.4
Central	7.8	7.8	10.6	10.7	8.1	6.1
Bangkok	10.1	7.4	14.5	20.3	43.0	48.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE K. Sudsprasert, V. Tunsiri and C. Ta Ngog, op. cit., p. 262.

universal, and disparities between regions are small. But the situation changes utterly as soon as we move on to the higher echelons. In the North-East region, for instance, the proportion of total enrolments drops rapidly from 36.3 per cent in lower-primary education to 26.5 per cent in upper-primary education, 23.3 per cent in lower-secondary, 14.5 per cent in upper-secondary, and finally to only 7.3 per cent for admissions to higher education. In Bangkok, we find exactly the reverse situation. Although the population of Bangkok represents only 10 per cent of the total population, the percentage of candidates accepted for higher education reaches 48.3 per cent. It should be pointed out that this figure refers to new admissions according to *parent's place of residence*, and not according to location of university, and that the percentage given reflects the overrepresentation of families living in Bangkok and does not stem from the impact of admissions to Bangkok's universities of students coming from other provinces.

When interpreting how disparities get worse the higher the educational level, it is also necessary to take into consideration the duration of the educational process. The reduction in disparities at a certain level will have an impact on the next level only several years later.

Figure 3, which presents the Lorenz curves corresponding to the different levels of the education system, illustrates this aggravation of disparities. If the proportion of enrolments had matched that of total population for every province, then all the points would have lain along the diagonal. At it is, the area between the Lorenz curve and the diagonal is a measure of the extent of these disparities. The greater this area, the greater the disparities, and this is in effect

a sizeable inflow of migrants. The age structure of Bangkok is consequently quite different from that of other regions. The third reason is that the rate of repetition is much smaller in Bangkok, so that enrolment is not inflated by a high proportion of repeaters." (K. Sudaprasert, V. Tunsiri, and Ta Ngoc C., op. cit., p. 262.)

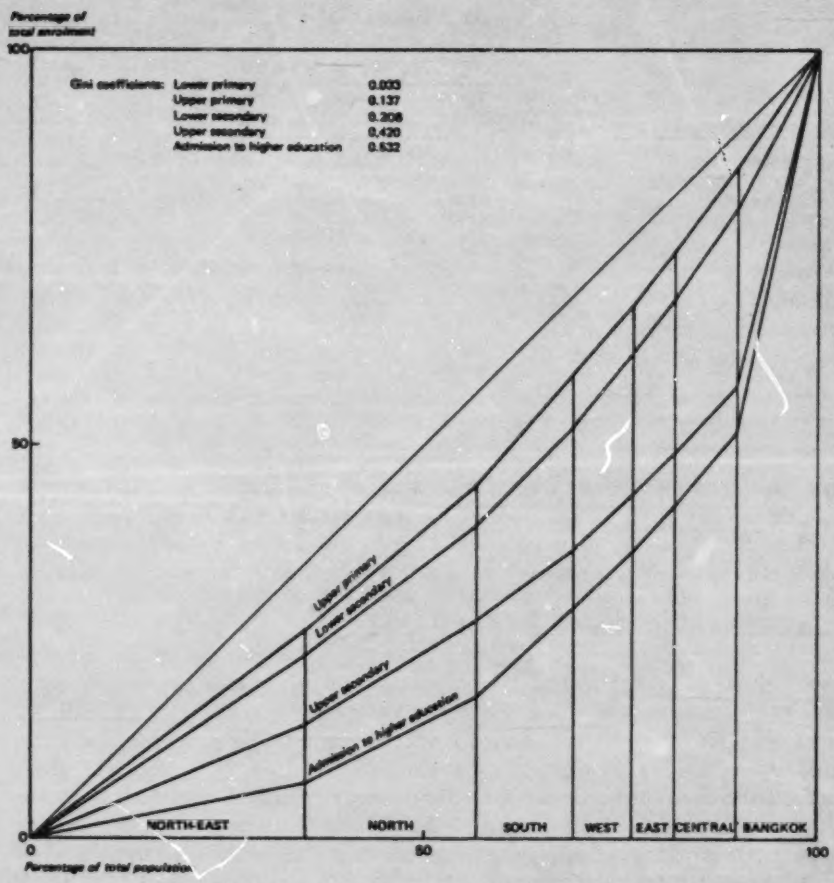


FIGURE 3. *Percentage of total population and percentage of enrolment in the various levels of education (Lorenz curve).*

SOURCE K. Sudsprasert, V. Tunsiri and C. Ta Ngoc, op. cit., p. 264.

what one observes as one examines each succeeding cycle of the education system. The Gini coefficient, which relates this area to that of the triangle as a whole, permits more precise comparison. In the case under review, the Gini coefficient varies from 0.033 for lower primary to 0.532 for admission to higher education.[1]

1. Concerning the use of Lorenz curves and the calculation of the Gini coefficient, see H. R. Alker, *Mathematics and politics*, New York, McMillan, 1970, and in particular Chapter III, "Measuring inequality", pp. 29-53.

3. *The relation between disparities in education and economic and social disparities*

It may be interesting to consider whether any relations exist between educational disparities and disparities in other spheres. The simplest approach, in this case, is to correlate educational variables with certain indicators of economic and social development. In the case study on Thailand the authors have selected the following indicators:

— gross product *per capita* (to measure the relative wealth of each of the provinces);
— urban population rates (i.e. urban population as a percentage of the total population of the province);
— the number of inhabitants per hospital bed (to measure the relative development of the health infrastructure);
— election turnout (as a percentage of all registered voters).

Table 12 furnishes the principal correlation coefficients calculated on the basis of the data of the 70 Thai provinces.

TABLE 12. Correlation coefficient between variables related to economic and social development and variables related to educational development

	Log GPP *per capita*	Rate of urbanization	Log population per hospital bed	Percentage of voters
Rate of urbanization	.7110[1]	—	−.5349[1]	−.5258[1]
Log population per hospital bed	−.4974[1]	−.5349[1]	—	.2652
Percentage of voters	−.5453[1]	−.5258[1]	.2652	—
Percentage qualified teachers primary education	.7845[1]	.8101[1]	−.5683[1]	−.5437[1]
P/T ratio primary education	−.4176[1]	−.2640	.4932[1]	.0450
Per-pupil subsidy provincial schools	.4910[1]	.6102[1]	−.5365[1]	−.0313
Percentage qualified teachers secondary education	.8325[1]	.7590[1]	−.5559[1]	−.5441[1]
P/T ratio secondary education	−.2532	.1394	.3010	.0224
Rate of access lower primary	.1225	.1425	−.0277	−.0195
Rate of access upper primary	.6271[1]	.5239[1]	−.4613[1]	−.3585
Rate of access lower secondary	.7398[1]	.7540[1]	−.6134[1]	−.4183[1]
Rate of access upper secondary	.7255[1]	.8664[1]	−.6293[1]	−.4438[1]

1. Significant at the .001 level.
SOURCE K. Sudaprasert, V. Tunsiri and C. Ta Ngoc, op. cit., p. 267.

The variables taken as indicators of economic and social development are strongly correlated, as can be seen from the corresponding correlation coefficient. The richer the province, the more urban it tends to be; the richer and the more urbanized it is, the lower the number of inhabitants per hospital bed, i.e. the

better its health infrastructure. What may come as a surprise is the negative correlation between election turnout and gross product *per capita*. There is a tendency, in other words, to vote less in the richer, more urban provinces. Bangkok, for example, is among the provinces with the lowest proportion of voters to total number of registered voters.

Concerning the correlation between educational variables and economic and social variables, the strong correlation between the percentage of qualified teachers (in both primary and secondary education) on the one hand, and urban population rates and gross product *per capita* on the other, is particularly noteworthy: the richer and the more urban the province, the higher the proportion of qualified teachers.

However, the most interesting correlations emerge when we turn to the question of access to the different levels of the education system. Admission rate to lower-primary education is very weakly correlated with the other variables. This is to be expected, since access to the lower primary is practically universal and the admission rate to this level is high in almost all provinces. On the other hand, once we come to access to the upper primary, and particularly access to secondary education, the correlation becomes much stronger, with both the logarithm of gross product *per capita* and the logarithm of the number of inhabitants per hospital bed.[1] In other words, it is in the richest, most urban provinces with the most developed health infrastructure that access to the upper-primary and secondary schools also tends to be most open.

Another way of exploring possible relations between educational variables and economic and social variables is by applying factor analysis.[2] On the basis of the Thai data, and using the "principal components" method, it has been possible, after varimax rotation, to extract two factors accounting for 70 per cent of total variance. The factor loadings associated with each factor are given in Table 13, and the coefficients whose absolute value is greater than 0.5 are shown in italic figures.

Factor 1 is strongly associated with urban population rates and gross product *per capita*. It therefore allows us to distinguish provinces according to whether they are richer or poorer, and more or less urban. In this factor, the factor loadings are particularly high for variables dealing with access to secondary education and teachers' qualifications. The structure of the factor loadings for factor 1 is in line with the results obtained earlier by the analysis of correlation coefficients.

1. The logarithm has been used rather than the variable itself, because the differences tend to increase rapidly as the variable increases in value.
2. For a general presentation of factor analysis, reference should be made to D. N. Lawley and A. E. Maxwell, *Factor analysis as a statistical method*, London, Butterworths, 1971.

   For a more thorough analysis, see H. H. Harman, *Modern factor analysis*, Chicago, University of Chicago Press, 1970, or R. J. Rummel, *Applied factor analysis*, Evanston, Northwestern University Press, 1971.

   For a presentation of the analysis of "correspondances", see J. P. Benzecri, *L'analyse des données*, Tome 2, "L'analyse des correspondances", Paris, Dunod, 1976.

TABLE 13. Factor loadings of the different variables

Variables	Factor 1	Factor 2
Transition rate from Grade 4 to Grade 5	*0.63151*	*0.62472*
Admission rate to upper primary education	*0.58614*	*0.60071*
Transition rate from Grade 7 to Grade 8	*0.80238*	0.01344
Admission rate to lower secondary education	*0.83999*	0.45733
Admission rate to upper secondary education	*0.81650*	0.41534
Percentage of qualified teachers in primary education	*0.86013*	0.29740
Percentage of qualified teachers in secondary education	*0.76998*	0.17440
Pupil/teacher ratio in primary education	−0.04435	*−0.79843*
Pupil/teacher ratio in secondary education	0.25640	−0.20056
Per-pupil subsidy to rural school	0.10870	*0.85655*
Percentage of enrolments in rural schools	*−0.56126*	−0.29768
Urban population rate	*0.82967*	0.29768
Percentage of voters	*−0.69344*	0.19932
Log. of the number of inhabitants per hospital bed	−0.47562	−0.37849
Log. of per capita GDP	*0.74412*	0.27797

SOURCE Analysis based on the data given in the study by K. Sudaprasert, V. Tunsiri and C. Ta Ngoc, op. cit.

Factor 2 is chiefly associated with subsidies per pupil in rural schools. This allows us to rank provinces according to the relative importance of central government financial aid for the running of rural primary schools.

In this factor, the factor loading of the pupil/teacher ratio in primary education is negative, but with a high absolute value; conversely the loading of the percentage of qualified teachers in primary education is low. This means that the more the province is subsidized, the more teachers it recruits (which reduces the pupil/teacher ratio), but not necessarily better qualified teachers, probably because of the difficulty of attracting qualified teachers to rural schools. It will also be observed that, in factor 2, the factor loading of the rate of admission to upper-primary education is relatively high. Admittedly, it is so also in factor 1. In other words, the rate of admission to upper primary is high either in rich and more urban provinces, or in provinces that receive substantial aid from the central government.

D. Developing new indicators

The indicators used in the different types of analysis presented above can be calculated fairly easily from statistical data available in most countries. Obviously, these analyses could be considerably enriched if the range of indicators available were broader. The question we shall be discussing in the paragraphs that follow concerns precisely the possible shapes of a more complete system of information in the educational sector. In answering this question we shall be

adopting a precise viewpoint: that of the planner whose job it is to organize the education service in such a way as to reduce disparities within it to a minimum.

One can obviously try to reduce disparities inside school systems pursuing very different social, economic, cultural and political aims. Our proposed frame of reference offers no basis for more general discussion of indicators required by politicians and administrators to guide, monitor and evaluate the development of an education system.[1] In particular, we have left out of this classification those indicators which concern the relations between education and inequalities in the labour market or in socio-cultural and political aspects of life in society. These problems are assuredly important, but they are so complex that they really require a discussion all to themselves.

The nature of the classification proposed is therefore restricted. However, even if we confine ourselves to the education system alone, paying no attention to the social effects produced by it, one is still forced to acknowledge that the aim of reducing disparities is hardly one-dimensional. It may encompass a wide variety of contents, depending on the context in which it is formulated. A very clear distinction must be drawn in this respect. Equalization policies are often formulated in terms of means. In such cases, people speak of developing the school network in such a way that school becomes accessible to all, or again of reducing disparities in the formal quality of these schools. Yet it is impossible to ignore the fact that, underneath these measures affecting *means* connected with the education service, there lie other—doubtless more important—aims connected with the pupil *results* that this same service produces.

The problem here is that while we can measure means, on the one hand, and results on the other, we know little about the relations of cause and effect existing between the two. All we do know, in fact, is that these relations are neither linear nor direct. Increasing resources or the level of qualification of teachers does not automatically produce an equivalent improvement in pupils' results. From the point of view of equality, we might even—at a pinch—leave this problem to one side, if we thought that education services of a given quality would provide comparable results with different groups of pupils. But we know that this is not the case. So it is not enough to envisage a policy to reduce disparities exclusively in terms of means. But a policy defined in terms of results, on the other hand, would be riddled with uncertainties, precisely because we know little about all the different factors that go to produce them. We are thus led to distinguish two categories of indicator, although we cannot exactly pinpoint the links that bind them.

1. In addition to the indicators given in the publications mentioned above, an interesting frame of reference is to be found in the article by Erkki Olkinuora, "On the problems of developing educational indicators", offprint from *Särtryck ur Acta Sociologica*, Vol. 16, No. 4, pp. 284-302.

1. Indicators of means

(a) Equalization of accessibility. There is very little difficulty in interpreting the objective of opening schools in such a way that all children enjoy equal opportunity of access to them. Indeed it seems to be a basic element of all policies to reduce disparities. Generally, though, accessibility is defined solely in terms of *physical* accessibility.

To measure this we would have to take into account distance, relief, communications, and the time taken to travel between school and home, bearing in mind available means of transport. The problem therefore consists in determining the catchment areas of existing schools in order to identify, on the one hand, the population that lies outside these catchment areas and is therefore deprived of any education service for reasons of physical accessibility, and, on the other hand, to estimate, inside the catchment areas (i.e. in the areas reached by the school system) the proportion of school-age children actually managing to find places in the schools.[1]

As, moreover, the education system is arranged in the form of succeeding cycles,[2] the transition from one cycle to the next often involves a change of school. The problem of accessibility therefore needs to be considered for each cycle. It is scarcely conceivable that the full range of cycles could be offered in every locality. The equalization of accessibility therefore involves laying on for pupils all the different services needed to reduce either the time spent in transport (school buses), or the frequency of journeys (school meals, boarding accommodation). These may be vital indicators which are relatively easy to obtain, but they are not always available.

But we can go further and consider the concept of *economic accessibility* also.[3] This concept is rooted in the idea that the barriers separating the clientèles of a service such as the school are not only physical but also financial. Essentially, then, this concept is bound up with inequalities of a socio-economic character far more than with disparities of the regional type. It would therefore be particularly useful to study this last kind of disparity in infra-regional analyses. But measuring economic accessibility raises problems, for it requires precise information concerning the cost of schooling as such (school fees), other costs to the family (school supplies, transport, school meals, boarding accommodation) and, above all, the opportunity cost of staying on in school.

However, the concept of opportunity cost calls for some discussion. All too often this cost is thought of as representing an equivalent sacrifice to all families

1. This is one of the problems of the school map. See J. Hallak, *Planning the location of schools: an instrument of educational policy*, Paris, Unesco: IIEP, 1977, Chapter VII.
2. There may be several cycles within any one level of education. Moreover, there may be a considerable difference between the *official structure* and the *real structure*. For instance, primary education may be composed of one 6-year cycle, whereas in practice it is divided into two cycles because of the existence of incomplete schools of only four grades in the rural areas.
3. OECD, *Measuring social well-being*, Paris, OECD, 1976, p. 21.

no matter what their circumstances. In fact, though, this is a highly relative notion for several reasons. To begin with, it is essentially analysed as income forgone, but this income forgone is real only if the type of work offered to the child, taking into account his level of education, is compatible with the family's social status. If this work is unacceptable to the family, then the income forgone is only a theoretical one.

Next, this income forgone represents additional or marginal income for the family. The utility of this additional income therefore depends on the family's existing income level. For well-to-do families, for instance, this utility is low. For less well-off ones, on the other hand, the utility may be considerably greater.

Lastly, this income forgone is perceived differently according to one's likelihood of finding work. If this is low, then the income forgone is only a potential one. In the countryside, the child's labour may constitute a real contribution to increased output or, at the very least, may help lighten the effort or the burden of work falling on the parents. Clearly, lost production produces different effects from those produced by a more or less probable loss of income.

For these three reasons, the opportunity cost is a far more decisive factor in deciding whether or not studies should be pursued for less well-off families than for the better-off ones. An indicator of opportunity cost ought to be able to take this factor into account.

The concept of *socio-cultural accessibility* is even more difficult to measure. When it comes to results, it has been observed in several countries that certain groups eliminate themselves. Parents fail to send their children to school, or else take them out of school, for reasons totally unrelated to questions of physical or economic accessibility. This has often been interpreted as the outcome of some cultural inhibition on the part of these parents. But even the fact of using a term such as cultural inhibition implies a value judgment. Does it not assume *a priori* that "school culture" is the right one, that there is no reason to question it? But does the school, as it functions in many countries, possess the cultural universality to which it lays claim? Certain sociologists (Bourdieu and Passeron, Bernstein, etc.) have sought to demonstrate that, on the contrary, the values inculcated by the school system and the code employed there are the prerogative of the dominant groups in society. Can we, moreover, speak of *inhibition* when, for example, cultural and/or linguistic minorities reject the school because it imposes the culture of the majority? In such circumstances, surely the aim of making school accessible to all implies also transforming the content and methods of teaching as well as measures directly concerning the family? Measuring the cultural distance (which may range from identification to outright rejection) between the school and its clientèles will therefore always be a relative affair, since it is always a specific type of school that one measures. Obviously, moreover, it raises much more complicated problems regarding the instruments of measurement than when we are dealing with physical or even economic accessibility.

On top of this gap between family ethos and school-promoted values, we should add that the way school is organized, its timetable, the way holidays are fixed, all are based on the assumption that the child is entirely available for school work and that, when he goes home, he will be looked after by his family. Consequently, the school timetable is planned solely on the basis of a certain conception of the child's learning pace, and of the convenience for the teaching staff and the school. It does not take into account the specific needs of the family, especially in rural areas, where work is seasonal and where children are needed to give a hand in the fields at certain times in the year.

(b) Equalization of formal quality. The aim of equalizing the quality of education raises a number of problems. Firstly, what do we mean by quality of a service? The answer to this question depends of course on the criteria used. One may very well prefer an old school with trees in the playground to a modern one with only a concrete playground, because the former has more charm and the pupils are closer to nature. In that case, one will turn a blind eye to the fact that the modern one is more functional than the older establishment.

Generally, though, quality is assessed on the basis of results achieved. Unfortunately, research has not yet progressed sufficiently to tell us what makes one school produce better results than another. Is it the qualifications of the teachers, the sophistication of its equipment, or a certain social climate? In the absence of any clear answer, the problem of the choice of indicators of quality remains an open one.

This problem is further complicated by the fact that there is quite probably a phenomenon of thresholds, equally little explored, at work. It is quite possible that below a certain level of quality certain factors really do affect results, whereas above this threshold the additional contribution is negligible or even nil.

It should be pointed out, however, that in many countries the disparities in quality are so great that their reduction is imperative not only for educational reasons but also for other reasons—health, political, or quite simply human. Even in such cases, the aim of equalization remains hard to define: to begin with, what is to be the standard towards which equalization measures ought to aim? Should the standard be set by the best schools in the country? Is there a minimum quality below which no one should fall, and if so how are we to define it? In fact we find that "improvements" in the school service usually occur without any clear policy behind them, and often on the basis of comparisons with the situation in the so-called 'more advanced' countries. Even so, it would appear to be essential that any policy in this sphere be guided by a detailed examination of the desirable characteristics of a good-quality school adapted to the needs and situation of the country concerned.

Here, however, a second difficulty arises. We cannot conceive of equalization in education as a mere levelling process. It seems nonsensical to lay down the same standards throughout when physical and human situations differ from one region to the next. So, how are we to achieve equality while respecting di-

versity? [1] This question brings us back once more to the problem of a minimum standard and that of the essential indicators of quality.

To identify *possible* indicators we may begin by breaking the school system down into its component parts. We generally distinguish between three broad categories: staff, buildings, and equipment.

The data most readily available concern teaching *staff*. The problem that arises here is a conceptual one. What determines the quality of a teacher? If we rely on the traditional view, which serves to underpin salary scales moreover, we start with length of general education and then go to teacher training (which is frequently inversely proportional to the former), and lastly actual teaching experience. Doubts have been expressed about each of these indicators. One possible improvement might be to examine the composition of the teaching staff for each school. We might, in fact, advance the hypothesis that the quality of a teacher is determined by the colleagues with whom he is in daily contact. In that case, the composition of the teaching staff in a given school in terms of qualification and, perhaps, age and sex, becomes an important factor. Generally, however, indicators of the quality of teachers are calculated on the basis of a series of schools rather than on a school-by-school basis.

The indicators of the characteristics of school buildings and equipment are rarely available. The quality of buildings may be defined in terms of general comfort (availability of sanitary amenities, for instance) and more specifically in terms of their pedagogic suitability (availability of specialized classrooms, for example). As for teaching facilities, we need to distinguish between school furniture and teaching aids. In the case of both buildings and equipment, we first need to measure quantities available against numbers of users. Obviously, there are enormous disparities between regions, and above all between town and country, on every score (availability of sanitation, desks, textbooks, exercise books, etc.). However, the data needed to measure these disparities are seldom collected and suitably processed.

To these three categories of indicators we should add some others that concern *the organization of teaching* in the broad sense of the term. Among the most common are the number of hours of teaching in general and by subject, or again the number of pupils per teacher. It sometimes happens that certain subjects are simply dropped (physical training, manual subjects, etc.) for want of specialized teachers. A high pupil/teacher ratio therefore signifies not just overcrowded classes, but also a narrower range of subjects taught.

The teacher/pupil ratio, or the number of pupils per class, often seems to be taken as a prime indicator of quality in education. In actual fact, though, it is used so commonly primarily because it is easy to calculate. At any rate, its explanatory power in terms of results seems to be weak,[2] which is not to say,

1. This problem area has been extensively dealt with in P. Furter, op. cit., pp. 51-84.
2. In the IEA studies concerning 21 countries, no link was found between level of achievement and the *number of children per class*.

   For one subject only (literature) was any relation to be found but it was the opposite to what would normally be expected: children in larger classes obtained better results

once again, that there may not be other reasons for seeking to reduce disparities in this sphere.

Another important factor, apparently, is the social composition of the pupils in a given school. In fact, several studies tend to show that this composition does affect pupils' educational attainments,[1] and we might formulate the hypothesis that in certain countries it may also affect retention. The degree of integration of different social or ethnic groups within schools may also prove important for other reasons, and especially to strengthen national unity. Similar reasoning could be applied concerning the composition of pupils in terms of sex.

Lastly, where the school system is streamed, or consists of different types of school which are arranged into a hierarchy, we would also need indicators of the network's structure. Here, the most convenient indicator would be the distribution of the number of places available for each stream and/or type of school.

(c) Equalizing quality in practice. Formal quality is a static notion referring to the external characteristics of a service. From the point of view of the different clientèles it indicates the kind of service it is *possible* to receive from it. Actual quality is a dynamic notion that refers to the functioning of a service and thereby indicates the service clients *actually* receive.

It is quite conceivable, for example, that a school may have excellent facilities that are never used, and highly-qualified but not very conscientious teachers. In that case, a poorly-equipped school that makes good use of its scant facilities, and has less well-qualified though devoted teachers may well provide a better service than the former.

We may therefore presume that the education policy-makers will not be satisfied with equalizing the formal quality of the educational service alone,

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than the other children. See D. A. Walker, *The IEA six-subject survey: an empirical study of education in twenty-one countries*, Stockholm, Almqvist & Wicksell; New York, Wiley, 1976.

For a critical analysis of the hypotheses behind the interpretation of the variable 'class size', see M. Cherkaoui and J. K. Lindsey, "Le poids du nombre dans la réussite scolaire", dans *Revue française de sociologie*, Vol. XV, No. 2, April-June, 1974.

Moreover, in M. Webster, *Three approaches to educational planning*, New York, Syracuse University, 1970, pp. ix-xiii, numerous references are to be found concerning the studies carried out in this field, together with a synopsis of their results (which are sometimes contradictory).

1. See T. N. Postlethwaite, *School organisations and student achievement*, Stockholm, Almquist and Wicksell, 1967, and in particular p. 107, where he states: "There is evidence (Svensson, 1962 and Husén, 1966) to indicate that 'good' students are not held back by 'poor' students when in the same school and, what is more important, that 'poor' students improve when with 'good' students, whereas when put into a homogeneous group they deteriorate. Thus, where differentiation is being practised at an early stage in the school system, it is the 'culturally' disadvantaged and/or lower ability child who suffers. In a sense, the practice of differentiation can exacerbate the plight of the culturally-disadvantaged child, since once differentiated into the 'poor' ability group (either inter- or intra-school) he will, in relation to his peers, deteriorate rather than improve."

but that they will also want to find out to what extent quality is being equalized in practice. In which case, they will want to measure factors such as:

— *the intensity and the manner in which school infrastructures and facilities are being used* (for example, it would no doubt be interesting to measure the extent to which facilities are used; one's concern here however clearly differs from that which seeks sufficiently intensive use of facilities to avoid wastage of resources, which is an essentially economic concept);
— *teachers' attitudes and methods;*
— *the social climate prevailing in a school.*

Analysis of these factors belongs to the realm of social research, and it raises serious conceptual problems inasmuch as we know little about the workings of the learning process. These difficulties are compounded by the fact that we must avoid confusion between equalization of treatment received and moves to establish uniformity. Since pupils are different in social background, identical treatment for all would be liable to produce highly uneven results. As Husén puts it: "The issue could be put in a paradoxical way by saying that one should provide equal opportunity for unequal treatment".[1] How are we to make this operational? The choice of indicators to be developed will depend on the answer to this question?

2. Indicators of results

By formulating objectives in terms of means, the education official is in fact hoping for certain results. In this context, the word "results" needs to be understood in its broadest sense, as referring to all the effects produced upon pupils by a given educational service. In fact, as we have already pointed out above, these effects are never completely predictable, since they flow from a series of little-understood interactions between the service and its clientèles. We do know however that a good many determinants of this interaction lie outside the school system and are therefore difficult to manipulate.

From this point of view, the objectives of equalization expressed in terms of results may concern numerous aspects, and particularly access to school, progress through the system, and educational attainments.

(a) Equalizing access. Access may be defined as the probability of *entering* each of the *succeeding* cycles in an education system, when there is no compulsory education or when primary education is not yet universal. The problem of access concerns admission to the first year of this level of education, but it also concerns admission to subsequent cycles, especially when this is decided by selective examination or competition or when a procedure (guidance procedures for example) exists to distribute pupils among different parallel streams or different types of schools.

Obviously, we need to distinguish the notion of access from that of accessibility dealt with earlier.[2] Access is essentially the measure of a *result*. Given

1. T. Husén, *Social influences on educational attainment*, Paris, OECD/CERI, 1975, p. 40.
2. See above, pp. 57-59.

a certain organization and spatial distribution of the school system, what proportion of children gains access to this service? To be sure, this access is affected by accessibility, but it also results from decisions made by parents and pupils themselves. There is no guarantee, in fact, that measures taken to increase accessibility will necessarily lead to increased access. To give but one example, even though accessibility is the same for boys and girls alike, the rate of access for boys is much greater than that for girls in many countries. This gap shows that results may differ from one group to another in spite of identical measures.

For precise measurement of the extent of disparities we need to be able to calculate, with the aid of real cohorts, rates of access (or admission), i.e. the proportion of a cohort [1] gaining admission to the first grade in each succeeding cycle in the education system. As we have seen above, data existing in most countries will not suffice to calculate cohort rates in this way, and we have to do it indirectly.[2]

We can also calculate transition rates from one cycle to the next cycle upwards, so as to the measure the degree of selection that operates, which may differ greatly from region to region. Where there are several streams, or where the types of school differ a good deal, we can also calculate transition rates to the various streams to find out both the degree of selection and the distribution of pupils among the different streams. The advantages of transition rates to the different levels and if possible to the different streams are that they can be calculated on the basis of school statistics alone. They therefore circumvent the problem of comparing school statistics with demographic data, collected neither at the same moment, nor at the same intervals, nor by the same people; which in addition do not necessarily refer to the same territorial boundaries.

Where regional disparities are concerned, we obviously need transition rates (eventually according to streams) and access rates for each region, distinguishing if possible between town and countryside, between sexes and between social groups.

(b) Equalizing progress through school. An important feature of education systems in developing countries is a generally high drop-out rate. In certain countries (particularly in Latin America and French-speaking Africa) a lot of research has been done on "wastage".[3] However, this research often adopts

1. In demography, a cohort can be defined as the total number of children born in a given year.
2. See above, pp. 41-42.
3. Among this research, particular mention should be made of: M. A. Brimer and L. Pauli, *Wastage in education: a world problem* (Studies and surveys in comparative education), Geneva/Paris, Unesco/International Bureau of Education, 1971; Office of Statistics, *Wastage in primary education: a statistical study of trends and patterns in repetitions and dropouts*, Paris, Unesco, 1979; E. Schiefelbein, "Repeating—an overlooked problem of Latin American Education", in *Comparative education review*, October 1975, Vol. 19, No. 3; and I. Deblé, "Les déperditions d'effectifs dans le Tiers Monde et ses ambiguïtés", in *Tiers monde*, Paris, July/September 1974, Vol. XV, No. 59-60.

the outlook of the education system itself and strives mainly to demonstrate the additional costs flowing from repetition and drop-out.

In analysing inequalities it would be preferable rather to adopt the pupils' point of view, and to see how they progress through the school system they have entered, the time they take to do so, and the likelihood of their completing it. Equalizing progress through school therefore implies reducing disparities in these three areas, and therefore calls for three types of indicator: an indicator of inequality in promotion, one of inequality in the rate of progress through the system, and one of inequality in retention.

(i). An indicator of inequality in promotion. As we saw earlier,[1] we may distinguish two indicators of promotion, which are different in nature. The first is exclusively concerned with success in school. It measures *the proportion of pupils who, at the end of the year, are deemed capable of moving up to the next class*, the remainder being required to repeat the class. In so far as being passed over for promotion is felt more as a failure than anything else, and may therefore lead to dropping out, this is an important indicator in an analysis of disparities.

But not everyone who is promoted necessarily turns up in the next grade; there may not be enough places available in the class, there may be no such grade in a school sufficiently near, or the pupil may be obliged to go out to work. So we may construct a second indicator to measure *the proportion of pupils actually enrolled in the next grade*, which depends on both success in school and accessibility.

(ii). An indicator of inequality in progress through school. Whereas the previous indicator is concerned only with results at the end of a given year and with the pupil's situation in the following year, an indicator of the rate of progress should cover the entire school career and should measure the years of excess in school, i.e., the additional time taken (over and above the normal amount of time) to reach a given class.

This indicator may be the number of years spent in excess for the whole educational cycle in each region. It could also be for each region the breakdown of pupils by number of years spent in excess for the various grades. Constructing this indicator presupposes the availability of information on the total number of previously repeated years for each pupil.

(iii). An indicator of inequality in retention. As we have already pointed out, comparing enrolments for two consecutive years does not allow us to identify the proportion of pupils returning to school after having dropped out temporarily, nor the proportion of pupils leaving a school in one area for one in another area. Estimating drop-outs is therefore an imprecise business. To what extent is what we consider a drop-out in reality a simple move from one school to another because parents have migrated, or a changeover from the public to the private school system? To what extent are drop-outs merely temporary, with pupils returning to the education system later on?

1. See above, pp. 42-44.

Using Chilean statistics, Schiefelbein by analysing new admissions over a 9-year period (1964-1972), demonstrated that the number of new admissions far exceeded the figure one might have expected on the basis of population data, even allowing for late admissions.[1] From this he concluded that the number of repeaters must have been substantially underestimated. Since the number of drop-outs from the first year is also very high, there might be an alternative interpretation, one not entirely in contradiction with Schiefelbein's: according to this interpretation a high proportion of drop-outs are not necessarily final, and children returning to school after having dropped out earlier artificially inflate the number of admissions regarded as new or belated.

All of the foregoing tends to show that the information available to us on the subject of dropping-out is imprecise and difficult to interpret. For a better idea of the problem of retention we would need to be able to identify real flows of pupils, and not to have to reconstitute them by comparing statistics for two consecutive years.

If we want to identify regional disparities in retention, we shall require information enabling us to calculate as precisely as possible the proportion of children admitted to a given cycle managing to complete this cycle in each region, distinguishing between urban and rural areas, between sexes and possibly between social groups.

As was the case for indicators of access, indicators of inequality in progress through school (inequality in promotion, rhythm of progress and retention) are indicators of results. The main point here is to find out to what extent formal and actual quality of teaching (as defined above) and accessibility affect promotion and retention.

(c) Equalizing scholastic achievement. Finding an objective measure of scholastic achievement is a delicate problem. In many countries, examinations and certificates still play a very important rôle in sanctioning studies completed. This is not the place to embark on a discussion of the problems—well-known to docimology—of non-standardization of examinations, of dissimular marking criteria, or of the considerable discrepancies observed in marks awarded by different examiners.[2]

Still, since certificates are needed to gain admission to the next level of education, or else to obtain jobs in the administration or the private sector, inequalities in examination results are an important aspect of inequality in education. We may therefore construct indicators based on results in different examinations so as to compare the situation in different regions.

The use of standardized testing has spread rapidly precisely because of the drawbacks of examinations in measuring educational attainment.[3] Constructing these tests calls for a good deal of work to ensure their validity and reliability.

1. E. Schiefelbein, op. cit.
2. A synthesis is presented in G. De Landsheere, *Evaluation continue et examens, précis de docimologie*, Paris, Nathan, 1974.
3. See B. Bloom, J. Hastings and G. Madaus, *Handbook on formative and summative evaluation on student learning*, New York, McGraw-Hill, 1971.

The greatest caution is required in borrowing tests constructed in other countries, owing to their in-built cultural bias. This problem can even exist inside a single country, especially in multi-ethnic societies or where there is a substantial gap between urban and rural areas.

At all events, these tests have the undeniable advantage of permitting simple quantification of cognitive achievement measured against a known standard, thereby facilitating comparisons between pupils, schools, social groups and regions. This is why extensive use of test scores is made in the numerous research projects on factors explaining inequalities in scholastic achievement.

In the above remarks we have tried to present the indicators of regional disparities by distinguishing between indicators of means and those of results (a synoptic presentation of these indicators is given in Table 14). For some indicators we can use the data already available, but for others, the requisite information calls for major changes in the instruments used, in the methods of data collection and in data processing. We shall return to this topic in the last section. The chief problem, however, lies in the relations between means and results. How far can we hope to equalize results by equalizing means?

TABLE 14. Synoptic presentation of indicators of means and indicators of results

Indicators of means	Indicators of results
Accessibility — physical — economic — socio-cultural	*Access to the different levels of the educational system*
Formal quality of the educational service — Composition and qualification of the teaching corps — Composition and grouping of pupils — Availability and quality of facilities — Availabiliy and quality of buildings	*Progress through school* — Promotion — Excess years in school — Retention
Actual quality of the educational service — Degree of utilization of facilities — Pedagogical attitudes of teachers — Social climate of the school	*Level of cognitive achievement, skills, attitudes*

III. The determinants of regional disparities

An impressive number of studies have been devoted to the determinants of inequalities. Some barely go beyond the descriptive stage, while others take the form of detailed analyses, most of them employing multi-variate analysis to assess the relative significance of the various explanatory factors.[1]

When reviewing this vast field of research, one is immediately struck by the fact that most of the publications deal with the industrial countries, chiefly the United States and Europe. By comparison, very little research has been done in the developing countries.[2]

What is more, much of the latter merely replicates what has been done in the developed world. As a result, we are faced not only with a borrowed problem (one that is not necessarily a priority in developing countries) but also a borrowed conceptual and methodological framework (which ought in many cases to be rethought out in terms of its altered field of application). In this respect, it is reasonable to think of data collecting methods as well as the choice of explanatory variables or the definition of concepts such as socio-economic category, for example, which is why in many cases the results obtained need to be interpreted cautiously.

The theme that has attracted most attention is that of inequalities in educational achievement, as measured by cognitive tests. This aspect is undoubtedly fundamental to the problem of disparities. In countries that have achieved universal primary education (often stretching to the age of 16 or 17), the persistence of this kind of inequality is obviously the central problem. In countries where educational development has not yet reached this point, the problem is certainly an important one, but it should not blind us to the existence of other kinds of very sharp inequality connected with access and retention rates.

1. A review of the studies undertaken in industrialized countries is to be found in the publication by T. Husén, op. cit.
2. For a partial review of studies carried out in developing countries, see L. Alexander and J. Simmons, *The determinants of school achievement in developing countries: the educational production function*, Washington, D.C., IBRD Working Paper No. 201, 1975.

Very little research has been done on these two problems, and although we are aware of their extent, we know little of their explanatory factors.

The monographs prepared for the project on regional disparities have taken their cue from this observation. They are thus concerned primarily with disparities in access and retention, and with disparities in school results to a lesser degree. In examining the determinants of disparities, moreover, the authors of the national case studies have generally adopted an historical, rather than a purely statistical, approach. The following paragraphs summarize the principal findings that emerge from these studies.

A. Disparities in access

The regional framework seems particularly suited to a study of disparities in access to education. After all, access is affected above all by physical accessibility, which by definition is organized on a territorial basis. In primary education, proximity of the school to home is the rule, and the equalization of the distribution of the school network is a necessary condition of equalization of access. In the case of secondary, and especially higher, education, where everyone accepts the possibility of separating children from their families for long periods (in boarding schools, for example), this condition is doubtless less of a problem, but it is important all the same.

Even so, it would be a mistake to reduce the problem of access to one of accessibility only. Planning is often founded on simplistic assumptions as to the relations between services and their clientèles.

Where primary education is concerned, the demand for schooling has often been treated as an absolute need existing in its own right, which must be satisfied by the provision of adequate supply. All that is required then is to set up schools for children to start attending. But the fact is that some parents do not send their children to school even when schools exist, or else they send them to school, only to remove them from it a year or two later. The interaction between supply and demand in education is by no means, therefore, a mechanical process entirely susceptible to manipulation by means of action upon supply.

1. The influence of past trends

The handful of studies on African countries in this IIEP research project (Cameroon, Madagascar, Kenya and Tanzania) furnish some insight into the factors that affect this interaction. Above all, they show that demand for education is not static, but that it has a past of its own which continues to influence the present development of school attendance. In Africa, disparities between regions date back to the colonial or even the pre-colonial era (in the case of Madagascar for instance), and in spite of efforts to expand the school system and redress the regional balance made by post-independence governments, these disparities have not diminished all that much.

The striking thing, when reviewing the past fifteen years in this continent, is that in primary education the absolute disparities in school attendance rates for

the different regions have stayed very high, even though in certain countries enrolments in the deprived areas have tended to rise faster than in the better-off ones.[1] This last phenomenon may stem, moreover, from the fact that growth in the well-off areas has slowed down as enrolments near their limit.

Figure 4 illustrates this trend for Kenya and Madagascar. In Kenya, primary education expanded very rapidly between 1965 and 1976. Enrolments almost trebled, from 1,010,900 to 2,894,600, and the apparent enrolment rate [2] for the entire country rose from 45 per cent to 93 per cent. But this average figure conceals a wide range of situations. In actual fact, despite a remarkable overall increase, substantial differences persist, since the apparent enrolment rate varies from 116 per cent in the central region to 9 per cent in the North-East region, in spite of the fact that enrolments were multiplied by 8.2 in the latter case and by only 2.4 in the former.

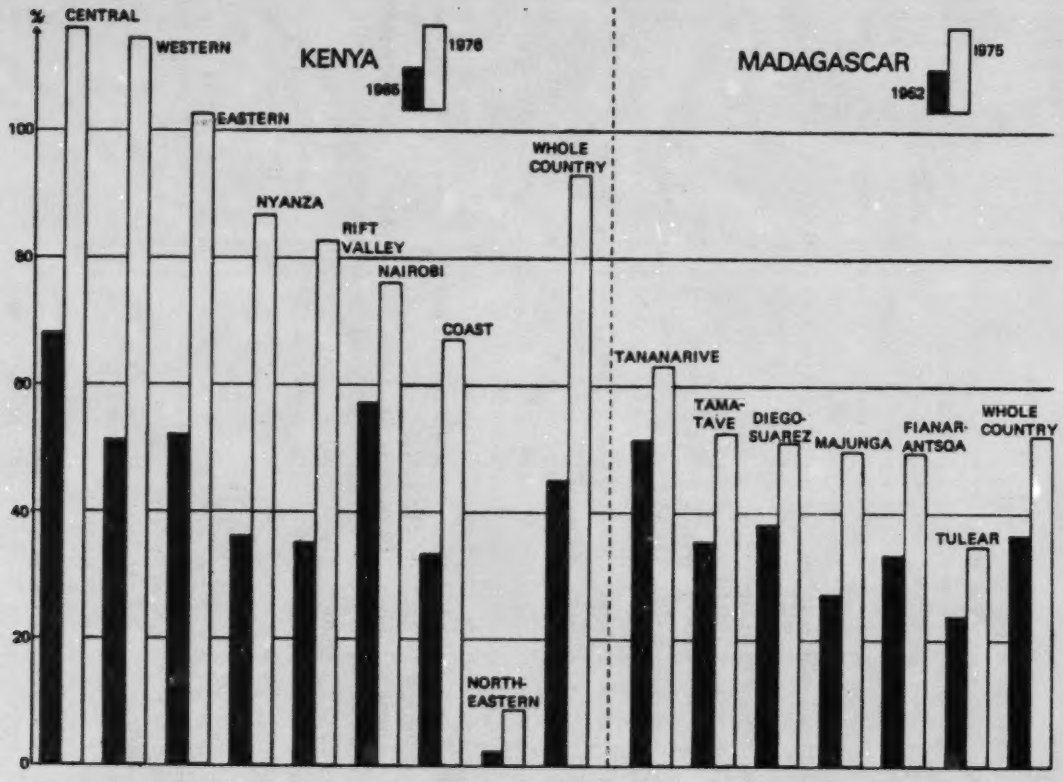
As can be seen from Figure 4, with the exception of Nairobi,[3] the ranking of the provinces remained stable over the period reviewed.

The pattern in Madagascar was similar. In this country, the primary system expanded impressively also, though less rapidly than in Kenya. Between 1962 and 1975 enrolments doubled, and the apparent enrolment rate increased from 36.5 per cent in 1962 to 52 per cent in 1975. However, enrolments in the least developed regions (educationally) grew scarcely more rapidly than in the more advanced ones: enrolments in the province of Tananarive—the leading province—were multiplied by 2.01 in the course of the period, while those in the tail-end province of Tuléar were multiplied by 2.17. This is why disparities measured in terms of enrolment rates are still substantial: 63.1 per cent for Tananarive and 34.7 per cent for Tuléar.

To account for this, P. Hugon has put forward a number of interpretative hypotheses whose relevance spreads well beyond the framework of the country dealt with in his study.[4]

The general interpretation is that, since independence, there has been a reversal in the relations between supply and demand. In the pre-colonial

1. The statistical data which follow concern the countries included in the disparities research project. Similar data for other African countries are to be found in: J. Bugnicourt, "Disparités scolaires en Afrique", *Revue Tiers monde*, Paris, October-December 1971, T. XII, No. 48, pp. 751-786.
2. The apparent enrolment rate used here is equal to:
$$\frac{\text{Total enrolment in primary education}}{\text{Population aged 6-11 years}}$$
3. The explanation given by D. Court and K. Kinyanjui, op. cit., p. 345, for the relatively low enrolment rates in Nairobi and in other important urban centres such as Mombasa and Naburu is that "in the first place while participation is universal among high and medium income groups, it may well be very low among the urban poor and unemployed. The rising urban squatter settlements in these towns point to this likelihood. At the same time, part of the explanation is contained in the practice whereby children are frequently registered in the father's place of urban work but are at some stage sent back to school in their rural area where frequently the mother resides."
4. P. Hugon, op. cit., pp. 172-179.



SOURCE D. Court and K. Kinyanjui, op. cit., p. 342; P. Hugon, op. cit., p. 160.

FIGURE 4. *Comparison of enrolment rates in the provinces of Kenya (1965 and 1976) and Madagascar (1962 and 1975).*

and colonial eras, schools were first imposed as an obligation, and later spread gradually in step with the need to install the machinery of government. In the restricted environment of colonial society, formal education was by no means regarded as a natural requirement, and the demand for education remained fairly small. Under these circumstances, the gradual spread of educational supply acted as a driving force behind the growth of education, which was mainly confined to primary schools.

Since independence, however, it is the pressure of demand which has taken over as the decisive factor in the development of education. What is more, this has now shifted its attention upwards to secondary and higher education. This reversal may be accounted for by a combination of several factors, most important among them being the gradual destruction of traditional social and economic structures and a particularly high population growth rate, which have encouraged migration from rural to urban areas. In these circumstances, the school has come to be regarded as a means of improving one's chances of successfully establishing oneself in the town on leaving the countryside.

After political independence had been achieved, moreover, it became necessary to fill a whole range of jobs formerly occupied by the colonizers; the machinery of government necessary to the workings of the new state had to be set up. In the early days this twin necessity bred rapid upward social mobility, carrying a small number of nationals to the highest echelons on the strength of their education. It is easy to see how this impressive social promotion must have powerfully bolstered the belief in the benefits of schooling, thereby fuelling demand for secondary and higher education, whose scope very quickly outstripped the actual possibilities of upward social mobility.[1]

J.-Y. Martin,[2] writing from a socio-political standpoint, draws attention to another contributory factor to this reversal in the relations between supply and demand, this time in Cameroon. In his opinion, analysis of colonial policy ought not to be confined to its economic aspects alone. Right from the outset it amounted to an all-out intervention in every aspect of the life of society (economic, political and ideological); but the impact of this intervention differed from one sector to another and from one phase of colonialism to the next. In the beginning, economic factors were indeed paramount in shaping contacts between colonizers and colonized. In this context, the founding of schools was to a very large extent subordinate to the requirements of economic development. Later, and more specifically since the end of the Second World War, relations between the metropolis and the colony have undergone profound change, the European powers having emerged weakened from the war at a time when the aspiration to greater justice for themselves was taking root among the local populations. Gradually, the political and ideological dimensions came to supplant economic determinants in social dealings between the two worlds.

1. P. Foster, *Education and social differentiation in Africa: what we think we know and what we ought to know*, Social Science Research Council, 1977, pp. 39-42.
2. J.-Y. Martin, op. cit., pp. 31-40.

The school, "as both a thinking and independent agency",[1] contributed to this change. As a result, the demand for education grew, which explains why, from this time on, the pressure of this demand began to squeeze out the imperatives of economic development. Since independence, the school's ideological rôle, which is aimed at legitimizing the authority of the state and the growth of national feeling, continues to act as the driving force behind educational expansion.

Still, these are general tendencies; but what is important in trying to understand present-day disparities is above all to seek out the factors that have contributed to the unevenness of demand for schooling from one region to the next. Some of these factors are glaring, and crop up in practically every study. Chief among these are the uneven spread of missionary activities and the different patterns of regional development of the trade economy. These factors are certainly important, but taken by themselves they cannot account for the complexity of the dynamics of educational development. In order to understand this dynamics better, J.-Y. Martin suggests examining it in the light of the very different ways in which the regional communities reacted to the colonial invasion. To do so he outlines an analytical framework based essentially on three factors. The first of these concerns the very nature of the colonial process. "Although the operation of colonization was certainly an all-embracing one, it was nevertheless phased in terms of space and time and did not have the same radical character for every group." The two other factors are bound up with the nature of local societies, which "were neither similar nor impervious to change. On the one hand, the colonizer intervened at different stages in their historical evolution and, depending on the situation, he either arrested or accelerated various processes within the internal or external relationships of these societies. On the other hand different types of social and political structures were already in existence and did not have the same degree of compatibility—or incompatibility—with the new structures which the Europeans wished to introduce. It was the combination of these three factors, i.e., the phased intervention of the white overlords, the historical evolution of each group and the different types of socio-political organization, which has produced such widely differing responses from the societies brought into contact with Europe's colonial powers".[2]

Combining these three analytical categories, the author successfully demonstrates how the educational behaviour of the different regions cannot be reduced exclusively to a difference between rich regions and poor ones, between Christian regions and non-Christian ones, or between economically developed and economically under-developed ones. It is these historically-shaped regional educational patterns which give meaning to the development of regional disparities and to the fact that they have persisted down to the present day in spite of efforts to eliminate them.

1. J.-Y. Martin, op. cit., p. 31.
2. *Ibid.*, pp. 31-32.

While the colonial régimes paid little attention to the uneven development of education, these disparities quickly became a matter of concern to the independent governments. In Cameroon, for example, the first plan (1961-1965), drawn up immediately upon its accession to independence, laid down precise objectives for their reduction.[1] Elsewhere, governments at first relied on the equalizing effects of overall expansion to absorb the imbalances inherited from the colonial era.[2] But it soon became clear that planned measures would be needed to tackle the problem. In Cameroon, as elsewhere, the situation is the same: planning has not been able to control spontaneous evolution within the system.[3] While primary education has indeed developed in the regions where schools were sparse, it has grown scarcely less slowly in the regions that were already well-equipped. The pressure of demand has overwhelmed the logic of supply.

2. The difficulty of controlling demand

We should now try to see what lies behind this state of affairs: the chief difficulty seems to be not so much encouraging the expansion of schooling in places where demand is low (although there may be other limits to expansion than the availability of resources), but to put a brake on it where rates are already high. But are the authorities really as determined to achieve this last objective as they claim? Is it even possible, in the prevailing socio-economic and political climate, for them to want to do so? What we can say here is that, generally speaking, plans are not all that explicit as to the means envisaged for implementing intentions.

The situation is slightly different for secondary education. Unlike what happens at entrance to primary school, access to this rung on the educational ladder is often highly selective in Africa. In many countries transition rates between primary and secondary education do not exceed 25 per cent.[4] But as primary education develops and as it becomes increasingly difficult to translate a primary-school certificate into a job, so social pressure for access to the next level of education grows constantly stronger.

Nobody seems to have found yet a satisfactory formula for remodelling primary education in such a way that pupils and parents come to look on it as a terminal, rather than an intermediate, stage in education. Which is why the most sensitive spot in the equalization of education is by no means always

1. J.-Y. Martin, op. cit., pp. 86-87.
2. D. Court and K. Kinyanjui, op. cit., p. 327.
3. J. Bugnicourt, op. cit., p. 766, remarks "It would seem as if it were extremely difficult to stop or limit the development of schooling in the most advanced regions in order to channel efforts to those regions which are the least developed. Of course, progress has been achieved—but this has been slow, costly and uncertain".
4. For a statistical study of the trends in transition rates from primary to secondary education in the countries of francophone Africa, see IEDES, *Statistiques de l'enseignement du second degré dans quatorze états africains et malgache*, 1961-72, Paris, Secrétariat d'Etat aux Affaires étrangères/Université de Paris I, 1973.

access to primary education, even if there are still yawning disparities at this level, but rather entrance to the secondary stage. In the eyes of the ever-growing body of candidates, gaining entrance to secondary education seems to be the only way to capitalize on their primary education. And it is at the threshold of secondary education that rejections of applicants become explicit. The problem of a fair allocation of limited numbers of places at this level of the school system becomes all the more acute where selection is severe, procedures explicit and the issues at stake important.

Faced with this problem, with its obvious political ramifications, the authorities generally adopt two possible strategies. The first consists in regulating access to secondary schools by means of a national competition and/or instituting regional quotas.[1] Certain countries, among them Cameroon for example, have even tried to readjust examination success rates in favour of the deprived regions. But the outcome of these strategies appears dubious, to say the least. In Cameroon, again, three times as many pupils are admitted to the first year of secondary school as were successful in the competitive examination (pass rate 5.5 per cent, admission rate 17.5 per cent, between 1970 and 1973).[2] Ratios are similar in Madagascar (pass rate 12 per cent, admission rate 40 per cent, in 1972),[3] or again in Kenya (pass rate 13 per cent, admission rate 34 per cent, in 1975).[4]

The distribution of pupils actually enrolled in the first year of secondary school generally reflects, or even accentuates, inter-regional disparities found in primary education. Here again, planners seem incapable of checking the pressure of demand, which varies sharply according to the degree of development of primary education in the different regions. This demand generates the supply to meet it, in the form of private schools, which are usually outside government control, and which amount to a kind of "second-chance network" for pupils failing to find places in the public system.

3. The role of private schools

In most countries the authorities have made special efforts to achieve a balanced development of secondary education, by allocating greater resources to the less well-off regions. This represents an alternative strategy to reduce disparities. These measures have produced certain equalizing effects in the public education system, but they too have been thwarted by the development of private education. Statistics show that private education develops where demand is very strong, in other words, in the towns and more generally in those regions where schooling is already well-developed.

1. For a comparative study of the different admission policies in Uganda, Zambia, Tanzania and Kenya, see W. T. Gould, "Secondary school admission policies in Eastern Africa: some regional issues", in *Comparative education review*, Vol. 18, No. 3, October 1974.
2. J.-Y. Martin, op. cit., pp. 63-64.
3. P. Hugon, op. cit., p. 169.
4. D. Court and K. Kinyanjui, op. cit., p. 354.

Table 15 illustrates this phenomenon for Kenya and Madagascar. They show first of all that in these two countries pupils enrolled in private secondary schools already account for a very substantial proportion of total enrolments; 49.4 per cent in Madagascar, and 57.7 per cent in Kenya. They show too that in both countries there is a clear-cut relation between the enrolment rate in primary education and the relative importance of private secondary education. It is in the regions where primary enrolments are highest that private secondary schools flourish most vigorously.

TABLE 15. Enrolment rates in primary education and percentage of enrolments in private secondary education in the different regions of Madagascar and of Kenya and Tanzania

Country and Regions	Enrolment rate in primary education	Enrolments in private secondary schools as % of total enrolments
Madagascar 1975		
Tananarive	63.1	56.9
Tamatave	52.5	30.7
Diego Suarez	51.1	48.4
Majunga	49.8	36.0
Fianarantsoa	49.6	57.6
Tulear	34.7	25.4
Overall	52.0	49.4
Kenya 1976		
Centre	116	60.1
West	113	67.7
East	101	60.3
Nyanza	87	60.8
Rift Valley	83	50.5
Nairobi	76	44.9
Coast	67	45.1
North-East	9	0
Overall	93	57.7

SOURCE Madagascar: P. Hugon, op. cit., pp. 160 and 164;
Kenya: D. Court and K. Kinyanjui, op. cit., pp. 342 and 355.

From the standpoint of equality, this situation raises serious problems, and not only because it exacerbates regional disparities in education. One reason for this is that, apart from a small number of excellent schools for pupils in the towns, most private education is very second-rate. The second-chance networks (such as the *Harambee* schools in Kenya) are thus second-class networks as well, which do not take their pupils very far most of the time. They recruit pupils from among the lower classes (urban mostly), who are obliged to pay dearly for their social ambitions. We thus find ourselves with a paradox, whereby the children of already well-off families come out top in the competi-

tions and thereby receive a good-quality public education, whereas children with less well-to-do parents have to make do with a private education that is both fee-paying and of lesser quality. We may go so far as to say that they pay twice over for shoddy educational service. Like all citizens, they contribute to the financing of the public system, but in addition they are obliged to make financial sacrifices in order to send their children to private school. There is of course a third category of children that is entirely excluded from secondary education.

The foregoing remarks have been inspired above all by historical studies conducted in a certain number of African countries. But they do point to three observations of a more general nature. The first is that education does not develop in a vacuum, but that it is part of (others may say that it is determined by) the overall process of social change, which has a history of its own and is spatially modulated. The second is that, upon reaching a certain threshold of school development, demand seems to take over as the driving force behind education development. The third is that where education development follows the pressure of demand it tends to bolster rather than diminish disparities.

These three observations raise numerous questions that call for further examination. Is it possible to reduce disparities in education without first, or simultaneously, reducing disparities in the overall process of development? How much freedom to manœuvre does the education planner have *vis-à-vis* the socio-economic environment? Is it possible to modify demand behaviour, and if so, how?

The answers to these questions depend largely on each individual's ideological stance. Quite possibly, though, empirical verification of the different hypotheses to emerge from these historical studies could help to clarify discussion. To do so we should have to take a closer, and more local, look at how relations between school and community actually work: at how parents perceive the school and what they expect from it, at how families decide which child to send to school and which one not to send, etc. This kind of study could very usefully supplement the macro-social information derived from the historical studies. They would furnish us with another type of information, concerning the interaction between local educational supply and demand. Unfortunately, very few studies of this kind have been carried out as yet,[1] and those that do exist are often little known or poorly used by education policy-makers.

B. Disparities in progress through school

Numerous statistical studies have focused on the problem of wastage in education in various countries, although much debate and controversy still surrounds the definition of concepts and methods of calculation.[2] In 1970 Unesco organized

1. For an inventory of studies on East Africa, see M. J. Mbilinyi, *Access to education in East Africa*, East Lansing, Michigan (Rural Africana no. 25), 1974.
2. See above, pp. 64-66.

an international educational conference on the theme of wastage, which represented a remarkable effort to analyse and clarify this domain. Two reports were written at the close of the conference, one on statistical and methodological problems, the other, more general in scope, on the extent of wastage and on explanatory factors. The second report also contained a review of the literature and presented the main findings of the IBE survey of Member States in 1969, as well as the conclusions of the 1970 Conference.[1]

Subsequently, Unesco's statistical office, in association with the Department of Education at the World Bank and the International Bureau of Education, launched a world-wide survey of the problem of repeated classes and dropping out. The initial results of this survey were published on the occasion of the last International Conference on Education, held in 1979.[2] All these documents are required reading for anyone interested in the problem of retention.

Table 16 gives some idea of the extent of repeaters in different regions of the world around 1976. While as a general rule there is a high percentage of repeated years in Africa (14 per cent), Asia (14 per cent) and Latin America (12 per cent), the disparities between countries within a single region are nevertheless very large. They are undoubtedly widest in Africa, where countries are strung out along the entire spectrum of repetition rates and where the rate exceeds 30 per cent in certain countries.

TABLE 16. Distribution of countries according to the percentage of repeaters in primary education around 1976[1]

	Percentage						
	0-4.9	5-9.9	10-14.9	15-19.9	20-24.9	25-29.9	30 and over
Africa (38)	6	3	7 (14 %)	6	7	5	4
Latin America (22)	4	6	7 (12 %)	3	2	—	—
Asia & Oceania (29)	8	7	7 (14 %)	3	3	1	—
Europe & USSR (22)	18 (2 %)	2	1	—	1	—	—
Total	36	18	22	12	13	6	4

1. The weighted average, which takes into account the population factor, is given in brackets for each region.
SOURCE Unesco, *Wastage in primary education*, op. cit., pp. 15-16.

Possible explanations of these differences refer us back to each country's own conceptions of learning, and of teaching and evaluation methods. The Unesco

1. Unesco, *Wastage in primary education in Africa*, Paris, Unesco, 1975; L. Pauli and M. A. Brimer, *Wastage in education: a world problem*, Geneva, IBE; Paris, Unesco, 1971.
2. Unesco, *Wastage in primary education: a statistical study of trends and patterns in repetition and drop-out*, Paris, Unesco, Office of Statistics, 1979.

report presented at the International Conference on Education in 1979 points out that the 16 African countries with repetition rates of over 20 per cent are ex-French, Belgian or Portuguese colonies, while the 9 countries with repeater rates of under 10 per cent are ex-British colonies. It attributes these differences to the impact of traditions inherited from the colonial era.

"Knowing the influence that the colonial period still exercises on the educational systems of many countries, it is interesting to note that France, Portugal and particularly Belgium had a higher percentage of repeaters than the other European countries (9.2 %, 11.0 % and 23.4 % respectively) while the United Kingdom practises automatic promotion." [1]

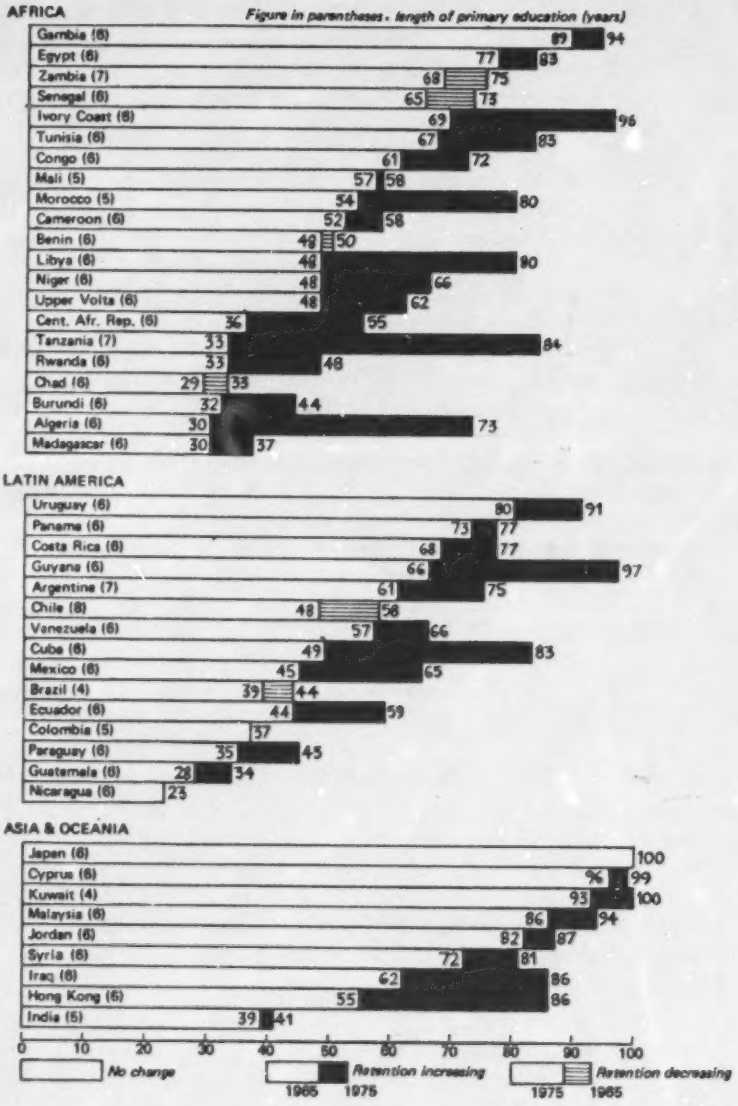
What is clear, at any rate, is that repetition is caused by the way the school system works more than by anything else. Its extent may therefore be reduced considerably by direct action upon the system to develop and reorganize the school network in such a way as to avoid enforced repeaters due to the absence of higher classes, or else by introducing a system of automatic promotion.[2]

Drop-outs, however, pose a much more complex and more worrying problem. Where these drop-outs are final, they spell the end of a child's school career purely and simply. Where they occur, and in alarming proportions, in the very earliest years of education, they completely undermine a goal such as universal primary education. It is far harder, moreover, to identify contributory factors to drop-outs and to come up with suitable counter-measures. Indeed we have very good reason to believe that drop-outs are not caused by the organization and working of the school system alone but that outside factors, such as family background, which are largely beyond the planner's reach, count as well.

1. The extent of dropping-out

In Latin America fewer than 60 per cent of children entering primary schooling reach the fourth year. A similar situation exists in Africa. Dropping-out is less frequent in Asia, although the rate is still high. Needless to say, these averages, which have been weighted according to enrolments in each country, in fact embrace a wide variety of situations. Figure 5 gives a more precise idea of retention rates in education systems in the different regions of the world. Thus we find that the Arab countries of North Africa and Asia achieve retention rates well above the average for their respective regions. Taking a closer look at differences between countries, we similarly find that retention rates vary between 29 per cent in Chad and 96 per cent in the Ivory Coast, in Africa, between 41 per cent in India and 100 per cent in Japan or Kuwait, in Asia

1. Unesco, *Wastage in primary education*, op. cit., p. 16.
2. On the basis of existing evidence, it is difficult to say which of the two solutions is preferable: repetition or automatic promotion to the next grade. It all depends in fact on the rôle of teachers and their way of teaching. An inventory of research in this field is to be found in G. B. Jackson, "The research evidence on the effects of grade repetition", *Review of education research*, Fall, 1975, Vol. 45, No. 4, pp. 613-628.


AFRICA
Figure in parentheses. length of primary education (years)
Gambia (6) 89 94
Egypt (6) 77 83
Zambia (7) 68 75
Senegal (6) 65 73
Ivory Coast (6) 69 96
Tunisia (6) 67 83
Congo (6) 61 72
Mali (5) 57 58
Morocco (5) 54 80
Cameroon (6) 52 58
Benin (6) 48 50
Libya (6) 48 90
Niger (6) 48 66
Upper Volta (6) 48 62
Cent. Afr. Rep. (6) 36 55
Tanzania (7) 33 84
Rwanda (6) 33 48
Chad (6) 29 33
Burundi (6) 32 44
Algeria (6) 30 73
Madagascar (6) 30 37
LATIN AMERICA
Uruguay (6) 80 91
Panama (6) 73 77
Costa Rica (6) 68 77
Guyana (6) 64 97
Argentina (7) 61 75
Chile (8) 48 58
Venezuela (6) 57 66
Cuba (6) 49 83
Mexico (6) 45 65
Brazil (4) 39 44
Ecuador (6) 44 59
Colombia (5) 37
Paraguay (6) 35 45
Guatemala (6) 28 34
Nicaragua (6) 23
ASIA & OCEANIA
Japan (6) 100
Cyprus (6) 96 99
Kuwait (4) 93 100
Malaysia (6) 86 94
Jordan (6) 82 87
Syria (6) 72 81
Iraq (6) 62 86
Hong Kong (6) 55 86
India (5) 39 41
0 10 20 30 40 50 60 70 80 90 100
No change
Retention increasing
1965 1975
Retention decreasing
1975 1985

SOURCE Office of Statistics, *Wastage in primary education: a statistical study of trends and patterns in repetition and drop-out*. Paris, Unesco, 1979

FIGURE 5. *Comparison of retention rates for cohorts in primary education around 1965 and 1975 (both sexes).*

and Oceania, and between 23 per cent in Nicaragua and 97 per cent in Guyana.[1]

What gives cause for special concern is that drop-out rates are often especially high in the first year of school. This is particularly frequent in Latin America, where the percentages of children leaving school before their second year of study were (around 1975): 45.7 in Brazil, 42.9 in Nicaragua, 35.7 in the Dominican Republic, 35.5 in Guatemala, 32.7 in Colombia, 29.4 in El Salvador, and 21.1 in Ecuador. We come across a similar situation in French-speaking Africa, where rates are 44.8 per cent in Chad, 31.3 in Madagascar, 29.8 in Gabon, 25.9 in Benin, 24.6 in Zaïre, and 22.5 in Cameroon. The problem is not quite so acute in the other regions, except in India, with a rate of 32.3 per cent in 1969.[2]

These figures are averages for each country as a whole. But we also need to study this problem from an infra-national standpoint. What the national case studies of regional disparities show is, first of all, that disparities between drop-out rates inside a given country can be very wide. In Cameroon, for example, analysis of the progress of a fictitious cohort, reconstituted from mean promotion and repetition rates, shows that the retention rate for the full 6-year primary-school course varies between 65 per cent in the Littoral region to 33 per cent in the North and East regions. Analysis shows, moreover, that "*most of the gaps* (in absolute figures) *occur during the first three years*. By the time the CE2 level has been reached, the North and the East have already lost more than half of those originally enrolled, whereas the other regions have retained two thirds of them".[3] (See Table 17.)

These studies then go on to show that the distribution of drop-outs is not random, but that it very closely matches the access pattern. In other words, the regions where schooling is less well-developed are also the ones with the highest rate of drop-outs from primary education.[4]

The problem is to find an explanation for these disparities. One reason often put forward is that the regions where schooling is least developed (in other words, rural regions mainly) are also those with the greatest number of incomplete schools, so that it is often materially impossible for children to pursue their studies in these regions.[5] In the absence of sufficiently detailed data on the progress of cohorts, on the one hand, and on the structure and distribution of the school network on the other, it is difficult either to confirm or to disprove this hypothesis.

1. Unesco, *Wastage in primary education*, op. cit., pp. 73-78.
2. *Ibid.*, pp. 73-78.
3. J.-Y. Martin, op. cit., p. 58.
4. This correlation does not necessarily hold for secondary education where admission to this level is very selective, as is the case in many African countries. In Cameroon, for instance, the retention rates in secondary education are almost the same for the different regions. See J.-Y. Martin, op. cit., pp. 63-67.
5. IEDES, *Les rendements de l'enseignement du premier degré en Afrique francophone*, IEDES, Université de Paris, Tome IV: Etude comparative, pp. 111-115, 1967.

TABLE 17. Progress of fictitious cohorts in each of the regions of the Cameroon, based on 1970-73 statistics

Regions	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	CEPE diploma
Littoral	1 000	817	786	711	677	653	246
West	1 000	832	809	723	653	572	180
Central-South	1 000	718	654	604	577	544	185
North	1 000	677	529	419	375	336	105
East	1 000	622	521	429	393	330	102
Country as a whole	1 000	718	656	579	547	511	173

SOURCE J.-Y. Martin, op. cit., p. 61.

In any case, it would be a mistake to regard the limitations and distortions of the school network as the sole explanatory factor, or even as the most important factor. Indeed, the fact that in many countries drop-out rates are often highest in the first grade of primary education suggests a need for greater subtlety. It would be hard, in such circumstances, to blame the lack of promotion opportunities to the 2nd grade, or expulsion from school for having repeated more than two or three times. At this early stage in education these factors may have a part to play, but only a minor one. How then are we to interpret the fact that many parents decide to send their children to school, only to remove them shortly afterwards? Have they been disappointed by school? Have they given up hope of their child's getting "his chance" because his marks are not good enough? Do they find the financial burden (uniforms, books, stationery) too heavy? Or are these drop-outs merely temporary ones, and do the children end up returning to school later on, thereby inflating the ranks of those counted as late enrolments? Perhaps there are quite different reasons too.

In fact, there are serious limits to analysis of global-type statistics, ones that are not technical alone (for example, comparisons between regional retention rates do not take into account movements of pupils within the system, and between regions in particular). Of course, they do help us to measure the general extent of the problem of wastage, but they are inadequate to tell us anything about the infinitely complex mechanisms that generate it.

2. The need for more detailed study of factors contributing to drop-outs

In order to study these mechanisms we should require far more detailed data on schools, and on the different grades inside them. We have good reason to believe that the factors that explain drop-outs in the towns are not the same as those in the countryside. They are not the same for an incomplete school as they are for a complete one. Similarly, a boy who leaves school in his first year probably does so for reasons different from those for which a girl leaves after four years in school. Do the two drop-outs signify the same thing, moreover? It is doubtful whether more refined statistical analysis of enrolments would tell us much more about the determinants of wastage. In order to understand them we should need to conduct, as with the problem of access, a series of micro-sociological and/or anthropological studies of families and schools.

It has to be admitted that very few such studies—detailed statistical analyses or micro-sociological studies—exist. The IBE survey of Member States in 1969, and the bibliographical search conducted by this organization, bear ample witness to this. The current state of our knowledge of the determinants of wastage rarely goes beyond the status of guesswork or anecdote. Several studies do list the different external and internal factors that are supposed to affect repeaters and drop-outs, but they are incapable of assessing their relative importance or how they interact.[1]

1. L. Pauli and M. A. Brimer, op. cit., Chapter 2, "Survey of the literature", pp. 23-38.

The practical question that lay, and which still lies, at the heart of the discussion is to what extent can one remedy poor retention rates by acting upon educational supply. It is perhaps a little worrying to learn that two eminent experts on education problems in Africa have arrived at diametrically opposing conclusions on this subject. One takes the view that "today, an African child's school attendance is determined more by the system itself than by psychological and social factors acting upon the individual and the family".[1] The other writes "what is surprising (and perhaps depressing) to professional educators is that class repeating and attrition are apparently not related to specifically educational variables".[2]

In these circumstances, it looks as though any attempt at defining a coherent policy on this issue is fraught with difficulty. Surely this is one reason why the situation has scarcely changed and why problems have remained as they are in spite of governmental declarations of intent and the recommendations voted by international organizations.

C. Disparities in scholastic attainments

Thailand offers a good illustration of the extent and the nature of the problem of disparities in scholastic attainments. Measured by a standardized test in the third year of primary education, children's knowledge of the Thai language and arithmetic varies considerably from region to region. As can be seen from Table 18, average scores for the two tests in the North-East region (26 per cent for Thai, 25 per cent for arithmetic) are scarcely greater than for a child answering at random (20 per cent correct answers). These scores indicate that after two years' study, a good proportion of pupils in this region have failed to assimilate the rudiments of these these two subjects. In Bangkok, on the other hand, scores were 51.3 per cent for Thai, and 51 per cent for arithmetic, twice the corresponding figures for the North-East.[3]

1. I. Deblé, "La déperdition d'effectifs dans le Tiers Monde et ses ambiguïtés", *Tiers monde*, Tome XV, Nos. 59-60, July/December 1974, p. 560.
2. P. Foster, *Education and social differentiation in Africa*, op. cit., p. 15.
3. K. Sudaprasert, V. Tunsiri and Ta Ngoc C., op. cit., p. 220. S. Heyneman observes that in Uganda the average score in the standardized tests which take place at the end of primary education (7 years) is higher for the more isolated rural areas than for the more developed regions (see S. Heyneman, *Planning the equality of educational opportunity between regions*, pp. 40-42 and op. cit., p. 143). How can these results, which contrast sharply with those obtained in Thailand, be interpreted? It is to be noted that in the case of Thailand these tests are administered at the end of the second grade, whereas in Uganda they are placed at the end of primary education. According to Heyneman, the higher scores obtained in the more isolated regions can be explained by the fact that in these regions selection is very severe (very low admission rates and very high drop-out rates). On the basis of this hypothesis, therefore, the poorer quality and the 'family handicap' of the school service would be "offset" by stricter selection.

   E. Schiefelbein and J. P. Farrel, "Evolución de las relaciones entre los factores del proceso educacional y el rendimiento escolar" in *Revista del Centro de Estudios educativos*, 1973, also indicates that in Chile there is no significant difference between

How are we to account for these disparities? We know that in general regional disparities in results coincide with disparities in the quality of the educational service as well as with differences in population characteristics. To return to the example of Thailand, the North-East is the region where schools are smallest, teachers the least-qualified, classes the most overcrowded, as well as the region with the largest rural population (76 per cent), and where only 1.5 per cent of the population speaks Central Thai, compared with 79.5 per cent in Bangkok.[1]

TABLE 18. Average scores for Grade 3 pupils in five regions in Thailand[1]

	Thai language		Arithmetic		Number of pupils
	Mean	Standard deviation	Mean	Standard deviation	
Bangkok	51.3	16.6	51.0	17.5	4 398
Central	33.6	12.8	33.4	15.1	5 627
South	31.2	11.2	34.2	14.0	3 991
North	29.0	10.7	30.3	13.2	2 126
North-East	26.0[2]	10.1	25.0[2]	12.5	9 755

1. These scores represent average percentages. The maximum score is 100. The differences between the means are statistically significant at $p<.05$.
2. The scores are near the chance level (20 per cent), in other words the level a pupil might achieve by random guessing.

SOURCE Office of the National Education Commission, *Equality of educational opportunity*, Bangkok, 1974, p. 8.

What then is the relative importance of (a) disparities in the quality of educational service, and (b) differences in pupils' characteristics, in trying to account for disparities in scholastic attainments? In other words, to what extent can we reduce differences in results by measures to equalize the quality of the educational service? This has been a question of paramount interest to social scientists for the past fifteen years.

At first, the answer was fairly clear, even if it did provoke sharp controversy over the statistical techniques employed: the fact of equalizing the quality of schools would have very little impact on disparities in results. Among the surprising conclusions reached in the Coleman report on the United States were that there is only a very small link between variations in the quality of educational service and variations in pupils' knowledge, once it was possible

the level of scores in the tests at the end of primary education (8 years) for the various regions which constitute development poles or the most isolated regions. This may also be a result of the selection process. It seems however that there is greater homogeneity between the regions in Chile than there is in Thailand.

1. Office of the National Education Commission, *Equality of educational opportunity: a study of primary schooling in Thailand*, Bangkok, 1974, p. 12.

to control for the socio-economic background of pupils; family background, on the other hand, is the most influential factor.[1]

These conclusions have often been interpreted deterministically, as though the pupil's social background was the dominant factor, against which the school was helpless. In fact, the situation is not quite so simple, and the Coleman report was followed by a good many studies providing us with a rather subtler view of the original answers. Among these studies we should mention the series sponsored by the IEA (International Association for the Evaluation of Educational Achievement) in 22 countries, involving nearly 10,000 schools, 50,000 teachers, and 258,000 pupils. This is surely the biggest educational evaluation project ever to be undertaken.

1. Methodological problems in research

Before taking a look at the main findings of these studies, a few preliminary remarks are in order. In general, analyses of the determinants of scholastic attainment are based on the use of the production function. The introduction of this technique into educational research represented a considerable step forward insofar as it permits a systematic estimate of the relative importance of each of the explanatory variables one wishes to examine. But its application to educational questions does raise a number of technical and methodological problems which tend to render the interpretation of results obtained difficult and often debatable.

It is not our purpose here to enter into the details of the often intricate discussions surrounding these problems,[2] but it is necessary to set forth some points of general interest.

1. Results obtained, and in particular the total proportion of variance in the results capable of being explained, varies considerably depending on the technique used, although it is impossible to say that any one technique is, in itself, better than any other.[3]

2. The explanatory power attributed to each variable depends on its order of entry into the regression equation. The problem stems from the fact that, in the educational sphere, the different explanatory factors are not independent of each other.

Generally, following Coleman's example, the first variables to be entered are those that measure socio-economic background, followed by those that measure the qualities of the educational service. The purpose of this is to avoid attributing to the quality of the educational service what might stem from pupils'

1. J. S. Coleman, *Equality of educational opportunity*, Washington, D.C. US Department of Health, Education & Welfare, 1966, pp. 21-22.
2. For a discussion of these problems, see L. Alexander and J. Simmons, op. cit.; W. G. Spady, "The impact of school resources on students", in F. N. Kerlinger (ed), *Review of research in education*, Itasca, Ill., Peacock Publishers, pp. 135-178; and D. F. Luecke and N. McGinn, "Regression analyses and education production functions: can they be trusted?", *Harvard educational review*, August 1975, Vol. V, No. 3.
3. T. Husén, op. cit., pp. 170-172.

socio-economic background, the two variables being strongly correlated. In so doing, however, we attribute to socio-economic background what is in fact *common* to both social background and the quality of the educational service. In his review of the IEA studies, Inkeles took the reverse approach and began by introducing the school variables. He then noted that these variables "consistently emerged as much more important than the home background variables".[1]

3. There is often a two-fold hiatus, firstly between the phenomenon one wishes to measure and the indicator selected, and secondly between the indicator selected and the question asked in the course of the survey. This difficulty, needless to say, is not specific to the use of the production function, but it should counsel caution when it comes to drawing conclusions.

We saw in the previous chapter that the development of appropriate indicators and data collecting were awkward tasks. Very often the indicators selected are merely partial numerical approximations of the behavioural and action variables one really wishes to measure. Can we really appraise the actual quality of educational service by measuring, for example, the teacher/pupil ratio or teachers' qualifications?

It is important not to lose sight of which variables research findings rest on, especially when using, in the presentation of these results, fairly broad concepts such as the school, educational supply, quality of teaching, while the variables measured refer to much more restricted aspects.

4. As in any mathematical treatment, the production function implies a number of implicit assumptions about relations between the variables entering into the equation. In other words, it rests upon a simplified model of the educational process, and some of its assumptions seem particularly dubious in the educational sphere.

By taking the characteristics of the school as independent variables in explaining the results of individual pupils it is assumed that all pupils benefit from the supply of schooling in the same manner, and in a manner not connected with their personal traits. This assumption is surely not all that justified when we think that very often the best teachers in a school are assigned to the best pupils, that the best pupils have readier access to the library or even to the laboratories, etc. "Thus, within-school differences in allocation are ignored and a major element of the relationship between inputs and outcomes is washed out." [2]

A second hypothesis refers to the multiple linear regression technique. This particular technique, which is the commonly-used one, assumes that the relations between independent and dependent variables are additive and linear. This means implicit acceptance of the idea that an increase in one variable automati-

1. A. Inkeles, *Review of the International Evaluation of Educational Achievement*, Reprint from the Proceedings of the National Academy of Education, 1977, Vol. V, p. 187.
2. D. F. Luecke and N. L. McGinn, op. cit., pp. 330-331.

cally increases or diminishes another, without upper or lower limit for either. But there is nothing to show that this is the case with education and that there is no such thing as a threshold beyond which relations between variables change, or even become reversed. We might, for example, advance the hypothesis that if there was a relation between the teacher's experience and his pupils' results, this relation might diminish after a certain point. We could argue similarly about teachers' qualifications or the quality and quantity of teaching aids. In such cases we might suppose, for example, that the relation with school results is a constantly rising though non-linear one, and that beyond a certain limit additional investment in these two spheres would cease to be "profitable".

Lastly, a third assumption arises from the fact that these studies are always what one might call cross-sectional. In that case, one might suppose that the values of independent variables measured at the time of the survey would reflect their value at the time when the child was admitted to school. In other words, it is assumed that the characteristics of the school and of each pupil's family remain unchanged throughout his entire school career. This assumption is seen to be theoretical, if only we bear in mind the extent of movements of pupils and teachers in many countries.[1] The production function technique would undeniably gain in efficiency were it to be employed in longitudinal studies. Here, by measuring pupils' attainments on entering and on leaving school, we could genuinely isolate the impact of the "educational production process". Generally, though, there are two drawbacks to this kind of study: they are expensive, and it may take years before the results are available.

The general conclusion we may draw from the foregoing is that the application of the production function to the educational sphere is bedevilled by a lack of precise knowledge about the pedagogical process as such. How exactly are knowledge and attitudes acquired in the classroom? In the absence of any clear theory, it is hard to know which variables are important or how to translate their interrelations—of which we know little—into appropriate mathematical treatment.

This problem is further complicated by the fact that education systems are open systems which are constantly subject to the influence of their environment. The variables characterizing the pupil (family, social background, etc.) continue to influence the child throughout his school life, and presumably in directions and degrees that differ according to his family background. Consequently, studies tend to neglect a vast range of complex and often reciprocal interactions between the repercussions of family, community, peer group and school. The lack of a coherent theory of the teaching process is surely the chief reason why studies often fail to account for anything but a small portion of the total variance

1. D. F. Luecke and N. L. McGinn, op. cit., p. 329 indicate that in the United States on average only 45 per cent of sixth-grade pupils in a given school were to be found in the same school six years earlier, and that approximately 12 to 20 per cent of all pupils change school each year.

in scholastic achievement (38.9 per cent on average, for IEA studies).[1] What needs to be done to remedy this situation? We shall be returning to this question at the end of this section.

2. Interpreting research findings

The foregoing remarks should encourage us to be cautious in interpreting, and above all comparing, research findings. It seems however that two conclusions emerge fairly clearly from the body of research undertaken since the Coleman report, enabling us to modulate our initial observations.

The first is that the relative importance of school and family variables varies considerably depending on the subject with which the achievement test is concerned. IEA studies show that in foreign-language tests (French or English), and to a lesser degree science, the explanatory power of school variables is greater than in reading or general comprehension tests. What is more, it is systematically greater than that of family variables and, in certain cases, the characteristics of the educational service go so far as to account for two thirds of total variance.[2]

How are we to interpret these differences? Are we to suppose that in certain specific subjects, such as foreign languages, families of no matter what socio-occupational status are incapable of providing their children with the pedagogical support that certain of them are perfectly capable of doing for other subjects? Such at any rate is the view expressed by Inkeles when he writes:

> Whether the qualities of the school milieu have a distinctive impact on learning a subject seems to depend a great deal on whether the skill being acquired is one with which homes and families may be well stocked or, by contrast, is a skill which is, relatively speaking, monopolized by schools and teachers. Homes clearly vary sharply by social class in the degree to which they contain within themselves the ability to teach reading, calculating, and, at simple levels, scientific facts or reasoning. When it comes to foreign languages such as French or English, however, even the wealthier and more educated parents are, with few exceptions, still in much the same boat as are the less advantaged.[3]

This view merits further study. Were it shown to be systematically true, we might be obliged to take a fresh, and considerably more balanced, look at our theories on the distances and interactions between the school and family background. All we can say for the moment is that the influence of the family on school results is not quite so clear-cut as the first results had led us to believe, but that it could in fact differ according to the subject being taught.

1. T. N. Postlethwaite, "The surveys of the International Association for the Evaluation of Educational Achievement (IEA)" in A. C. Purves and D. U. Levine, *Educational policy and international assessment*, Berkeley, California, McCutchan Publishing Corporation, 1975, p. 24.
2. J. Simmons, *How effective is schooling in promoting learning: a review of the research*, Washington, D.C., IBRD Staff Working paper, 1975; T. N. Postlethwaite, op. cit., p. 25.
3. A. Inkeles, op. cit., p. 189.

Yet another conclusion should induce caution in generalizing and extending the results of a study undertaken in one country to other countries. Countries can differ quite considerably when comes to the relative importance of school factors and family factors in explaining variables in scholastic attainments. According to the IEA surveys, family background generally seems to be more important in the United States than elsewhere.[1]

This tendency is valid when we consider the other industrial countries, but it is even more so when we turn to the developing countries, and a limited, though growing, number of studies conducted in several of these countries seems to show that, compared with the industrial countries, family background accounts for a smaller portion of variance in levels of educational achievement.[2] As Heyneman points out, this tendency seems to be more marked in Africa,[3] but it can also be observed in Chile [4] or in Thailand.[5]

Several hypotheses could be put forward to account for these observations. To begin with, it could be that we are incorrectly measuring real differences in family background in non-western countries. Foster points out [6] that when we examine school results we take the socio-economic status as an indirect and approximate indicator of differences in the family's way of bringing up children. However, the fact that we have observed a link between family culture and socio-economic category in the West does not necessarily imply that it exists elsewhere. It could be that the objective measures we generally use to distinguish family background are not valid indicators of differences in cultural models in other societies.

We may go further and formulate the hypothesis, which has been confirmed by several studies of social change, that African societies, where social and economic inequalities are growing, have remained relatively homogeneous, culturally speaking.[7] In that case, it would be quite normal for the family's influence on school performance to be less marked than in other types of society.

This hypothesis could indeed find comfort in one formulated by Inkeles on the differential distance between families and the school depending on the

1. Inkeles observes that the home environment accounts for only 10 per cent of the variance on the science tests, which leads him to reformulate Coleman's conclusion in the following way: "After the socio-economic background of the students has been taken into account, students are still remarkably different in their academic performance, with about 90 per cent of the variance in their test scores still remaining to be explained by other factors". (A. Inkeles, op. cit., p. 186.)
2. L. Alexander and J. Simmons, op. cit., pp. 51-52.
3. S. Heyneman, op. cit., p. 135.
4. E. Schiefelbein, J. P. Farrel, *Factors influencing educational achievement in Chile and developing nations: a comparison*, Washington, AERA Meeting, December 1975 (quoted in S. Heyneman, op. cit., p. 39).
5. Office of the National Education Commission, *A study of primary schooling in Thailand: factors affecting scholastic achievement of primary school pupils*, Bangkok, 1978, pp. 32-35.
6. P. Foster, *Education and social differentiation in Africa*, op. cit., pp. 30-32.
7. P. Foster, op. cit., pp. 42-43.

subject in question. Seen thus, we might suppose that, inasmuch as the school in Africa is an imported system, which often conveys a content that does not reflect endogenous culture, and in a foreign language at that, all families (with the exception of a small westernized élite) find themselves labouring under the same 'educational handicap'.

Another hypothesis takes root in the same line of thought. According to this, the educational attitudes and motivations of children from different backgrounds differ less in fast-changing societies characterized by a recent and spectacular upward social mobility (even if this only affected a small number of people).[1] Indeed, several studies of Africa show that, contrary to what is found in the industrial countries, socio-economic background has less influence on children's aspirations, or at least on those already in school.[2] Now, insofar as there is a link between motivation and results, the proposed explanation does seem plausible.

These hypotheses would still have to be verified for the African continent, and we should still have to look into their possible explanatory power for other regions. Leaving aside the first hypothesis, which is of a technical order, the others refer to theories of social change, the rôle of the school in differentiation and social structuration, and the way social actors perceive this process. What is certain, though, is that the objective data are by no means the same from one region to the next.

Here too we should be wary of over-hasty generalizations. It is quite probable that the explanation for certain phenomena observed at the present time in the educational system supposes above all a fuller understanding of the process of social change in its entirety. Any progress we may make in educational research is intimately bound up with progress made in social research in general. At any rate, the high degree of correlation observed by Heyneman between a country's level of industrialization on the one hand, and the relative influence of the family's socio-economic status on children's school performance on the other, apparently points to an interesting avenue of inquiry.[3]

Research has not only investigated the general problem of the relative influence of family and school on the outcome of the pedagogic process: it has also tried to discover which specifically scholastic or family factors are most important.

Following this line of thought, we shall be taking a look at scholastic variables, i.e. variables on which education policy-makers may act directly.[4] In this case, it is not enough to know what portion of variance in results may be attributed

1. Heyneman, op. cit., p. 136.
2. P. Foster, *Education and social change in Ghana*, London, Routledge & Kegan Paul, 1965; R. Clignet and P. Foster, *The fortunate few: a study of secondary schools and students in Ivory Coast*, Evanston, Northwestern University Press, 1966.
3. S. Heyneman, "Influence on academic achievement: a comparison of results from Uganda and more industrialized societies", *Sociology of education*, Volume 49, July 1976, pp. 204-205.
4. For a comprehensive analysis of family factors, see the research by T. Husén, op. cit.

to differences in the educational service. With his limited resources, the policy-maker is obliged to choose between alternatives and set priorities: can we improve results by reducing the number of pupils per class, by retraining teachers, by building boarding accommodation and school dining-rooms, by installing certain kinds of school facility, by more intensive use of textbooks, etc.? We have to admit that such pointers as research is capable of giving us are still somewhat incomplete and are not always clear.

Heyneman, in his study prepared for the project on regional disparities, makes a critical review of what we know about the different factors that influence the educational process.[1] His review shows that despite considerable efforts made to date, research findings are still ambiguous and often contradictory. However, two general conclusions do emerge from this inventory. The first is somewhat negative. It has not been possible to discover the factor or factors of educational quality that would allow us to "equalize painlessly". On the contrary, certain indicators traditionally held to be important by planners, such as the number of pupils per class, modernity of buildings, use of up-to-date teaching aids, do not seem to have as much influence on pupils' results as one might intuitively imagine. It has been observed, for instance, that from the point of view of pedagogic returns, a poor school need not necessarily be inferior to a rich one, a single-teacher school to one with several teachers, a school with "overcrowded" classes to one with few pupils. Even analysis of a factor such as teachers' qualifications, which has been regarded as crucial in all equalization policies, has turned up contradictory conclusions.[2] Certain preconceived ideas about the quality of educational service have thus not been borne out by research, and the very notion of quality is still ambiguous.

On the other hand, to strike a more positive note, this research has shown that certain factors insufficiently studied in the past may have a far-from-negligible influence on school attendance. One of these is nutrition and health. It is quite likely that programmes to distribute food and health care in the most deprived areas could have an equalizing impact. It is also clear that without a minimum of means no educational service, even if premises and the teacher are on hand, can function adequately: blackboard, basic school supplies such as chalk, pencils, paper, textbooks. Yet these resources are often lacking in the most deprived areas, chiefly owing to the shortcomings of the distribution net-

1. S. Heyneman, op. cit.
2. A recent study carried out by T. Husén, L. J. Saha and R. Noonan, entitled *Teacher training and student achievement in less developed countries*, World Bank Staff Working Paper, No. 310, December 1978, reviews 32 different studies on this one research topic. From a selection of 11 studies which measure directly the effect of the teacher's level of education or type of qualification on pupil achievement, the authors feel that 6 of these studies show that there is a positive effect, 3 that there is no effect, and 2 that the effect is negative. The general conclusion which they draw from this inventory is that the distribution of the results of these studies does not permit the hypothesis to be confirmed, by which the profile of teachers has no influence whatsoever on pupil achievement. In fact, there are certain pointers to conclude that the effect is positive, but further research would be necessary to measure the extent of such an effect.

work. This is why any improvement in this system capable of ensuring a fairer distribution of these rudimentary means could, in turn, have positive implications for equality of opportunity in education.

On the whole, though, research has turned out to be an exercise in disenchantment. So it would be interesting to find out just how we have managed to achieve such inconclusive results.

One reason could be that we have not chosen the right indicators. When one looks down the long lists of variables used in many studies (500 in the IEA studies) this remark may raise some eyebrows. Still, we might recall that certain variables have often been neglected because it has been assumed, *a priori*, that they do not vary from one school to the next. Among these are the minimum list of teaching aids mentioned above: desks, exercise books, etc. Availability of textbooks, for example, has often been left out of studies, and yet each time it has been included the results have been positive.[1] It is also worth bearing in mind Heyneman's observation that in Ugandan primary schools it is the availability of a duplicating machine (the kind of variable no one would pay special attention to) which has produced the strongest correlation with pupils' results.[2]

Another explanation could be that we often measure the variables we do want to study incorrectly, and especially that they are measured differently in different studies, which could account for certain contradictory findings. We might point out, lastly, that the linear regression technique is ill-suited to study the complex relations between certain school variables, particularly those containing threshold effects in their impact on other variables.

But the real difficulty surely lies elsewhere and refers us back to the distinction made between formal quality and effective quality. What people measure most of the time is the formal aspect of educational service, that is, the different material and human resources available to each school. In so doing, can they really be said to have laid bare the essence of educational quality? Typically, each time we look at the real treatment being meted out to pupils, the coefficients of regression become more significant. In Thailand, for example, the general training of teachers, or even their level of knowledge as measured by tests,[3] seems to have little influence on pupils' scholastic attainments. Conversely, indicators of motivation generally show a positive correlation. Similarly, the frequency of homework does seem very important,[4] as do indicators measuring the general climate of a school.[5]

Maybe we ought to pay greater heed to the way schools work. After all, the quality of a school depends not so much on the wealth of its resources but on

1. S. Heyneman, op. cit., pp. 152-155. See also S. Heyneman, J. P. Farrell, M. A. Sepulveda-Stuardo, *Textbooks and achievement: what we know* (World Bank Staff Working Paper No. 298), Washington, D.C., IBRD, 1978.
2. S. Heyneman, op. cit., p. 155.
3. Office of the National Education Commission, op. cit., pp. 30-31.
4. L. Alexander and J. Simmons, op. cit.
5. W. G. Spady, op. cit., pp. 167-168.

the rich pedagogical relations it manages to foster. Two factors, though, have helped to sustain the present direction of research: the ease with which these external characteristics can be measured, and the computer's ability to process an infinite number of variables. Researchers have struck out boldly in this direction without having any very clear idea of just what makes for quality in education.

The time has surely come to supplement this quantitative research effort with some qualitative research, which could guide researchers in their choice of variables and in interpreting results. This would imply looking at schools not only from the outside but also from within, and through participation.

A number of interesting projects have already been undertaken in this direction, for example in the United States and Canada.[1] It is now necessary to see how we can broaden these initiatives, and above all how we can reconcile these two approaches, quantitative and qualitative, in the future.

1. S. Wilson, "The use of ethnographic techniques in educational research", in *Review of educational research*, Winter, 1977, Vol. 47, No. 1, pp. 245-265; D.W. Ryan and T. Barr Greenfield, *Clarifying the class size question*, Ontario, Ministry of Education, 1975.

IV. Reduction of regional disparities

Reducing disparities is not a self-evident objective. On the contrary, it presupposes planned action to counteract the natural dynamics of the expansion of education systems. For reasons spelt out above, schools tend to develop more rapidly in areas where they are already firmly established than in deprived areas. The intensity of demand for schooling depends on how functionally adapted it is to the environment of the community it serves and on opportunities available to individuals of putting the training received to good use. What is more, the way this demand is expressed and the strength it acquires also vary with their capacity for organizatoin. This is why an education policy concerned solely to satisfy demand as and when expressed by different social groups tends rather to aggravate than to alleviate disparities. The reduction of disparities —which implies a reallocation of educational development effort among the different regions and calls for special efforts in favour of deprived zones— entails, on the contrary, measures designed to counter the spontaneous evolution of the system. Therefore it could never be other than deliberate, and consequently difficult to implement.

Further, owing to the very nature of the demand for schooling (which is a function of the surrounding social context), a policy of reducing disparities in education is more likely to succeed if it forms part of a more global policy directed at every aspect of development. In other words, shifting the balance of educational development depends on a policy of equalization whose scope extends well beyond the school alone. This accounts for the growing concern of governments to develop integrated planning systems and, at the earliest opportunity, to include educational activities in their programmes of measures designed to improve general living conditions among deprived groups.

In what follows we shall endeavour to identify some of the concerns shared by governments in respect of the reduction of regional disparities. We shall then go on to examine the implications of these concerns for planning methods. It is important to make clear from the outset the limits to this regional approach. Reducing disparities between regions is a matter of equalizing access to educational service and the quality of that service. It consists primarily in actions to affect the supply of education, having scarcely any direct impact on inequali-

ties connected with family background, these being more closely associated with the socio-professional structure and the social division of labour. This is why inequalities of a social order, especially in school results, tend to persist even where educational conditions have been standardized in all regions of a given country. In other words, the reduction of regional disparities is just an initial, albeit essential, step in any policy aimed at equalization.

A. Governments' twin concerns

For most developing countries, the goal of reducing regional disparities raises different problems depending on whether one is concerned with primary education or with secondary and higher education. In primary education, the aim is to guarantee basic education for all children, this being regarded both as a basic civic right and as a necessity for the economic development and cultural progress of the nation. At this level, then, the reduction of disparities will take the form of *extending* the reach of educational service as rapidly as possible, until it has become universal.

Once past primary education, however, the problem changes. The immediate aim is not to satisfy demand for schooling in its entirety. At these educational levels, selection becomes a necessity, and in the short term policy aimed at reducing disparities is reflected in a concern to *allocate fairly* the limited number of places that each country is able to offer.

In practice, application of these two goals raises a number of problems, which we shall briefly review in the paragraphs that follow.

1. Extending primary education to deprived areas

Although great progress has been made over the past fifteen years, universal primary education still remains to be achieved in a good many developing countries. Table 19 illustrates the way matters stand in the different regions of Africa, Latin America and Asia. It shows that the national enrolment rates in a fair proportion of countries—especially in Africa—are still below 50 per cent.

TABLE 19. Distribution of countries according to enrolment rates of children aged 6-11 in Africa, Latin America and Asia (1975)

	Enrolment rates			
	Under 50 %	Between 50 and 85 %	Over 85 %	Total
Africa	22	19	6	47
Latin America	2	4	10	16
Asia	6	18	8	32
Total	30	41	24	95

SOURCE Division of Educational Statistics, *Trends and projections of enrolment, by level of education and age*, Paris, Unesco, Office of Statistics, 1977, pp. 74-83.

What is more worrying, though, is the fact that inside these countries, even in those that have achieved high enrolment rates, more often than not, one comes across considerable disparities in the level of educational development from one region to the next. Thus in Kenya, which in 1976 had a gross enrolment rate of 93 per cent, regional differences went from 9 per cent in the North-East to 116 per cent in the Central Region.[1]

In fact, it is as if there were two distinct phases in the generalization of primary education. The first consists in developing educational service in areas where this service meets a need felt directly by the population, generally in towns and economically developed regions. This is the relatively easy stage, in which the chief concern of the authorities is to satisfy a guaranteed demand as quickly as possible. In the second stage, on the other hand, once the bulk of the nation's demand has been satisfied, the problem becomes one of stimulating school attendance in areas which, for historical reasons, have been passed-by in the process of educational development. Here, the problem is no longer simply one of establishing schools but often of actually having to stimulate demand for education among deprived and marginal groups while at the same time developing a supply adapted to their specific requirements. This second stage is a good deal more complex than the first, since it is at this stage that the problems of interaction between educational supply and demand, as these emerge in the very low enrolment rates and the very high drop-out rates in deprived areas, become particularly acute.

Before going on to examine the different ways in which governments have sought to tackle these problems, it is worth mentioning a difficulty of a more general order, which complicates the generalization of primary education in many countries, namely resource constraints.

(a) Restrictions on resources. A recent study prepared for the Office of Statistics of Unesco shows that practically everywhere public expenditure on education has experienced a very rapid increase over the past two decades and now constitutes a very heavy burden for many countries. This is especially true for developed countries, where the share of the GNP allocated to education is in general more than 5 per cent.

> But for some developing countries the burden may be even greater. With a much lower *per capita* income, over a third of these countries not only exceeded 5 per cent of GNP in 1976 but, more important, have increased their expenditure much more rapidly since 1960. Many are spending more than 25 per cent of the national budget.[2]

One may therefore wonder to what extent certain countries will be able to continue the very considerable financial efforts for education which they have made in the past. The countries with the lowest primary-school enrolment

1. D. Court and K. Kinyanjui, op. cit., p. 342.
2. J. C. Eicher and F. Orivel, *The allocation of resources to education throughout the world*, Paris, Unesco, Division of Statistics on Education of the Office of Statistics, 1980.

rates are generally also the poorest. Consequently, the spread of education in these countries in the future seems likely to occur in a context of more stringent financial constraints, and the allocation of resources to the different levels of education can be expected to pose increasingly delicate problems.

In these circumstances, several strategies may be envisaged to increase primary education's relative share : tighter control over the expansion of secondary and higher education, cutting the costs of these two levels of education, and recourse to alternative sources of financing.

(i). Controlling the expansion of secondary and higher education

Statistical data show that controlling the expansion of secondary and higher education is a difficult strategy to apply in most countries. We find, generally, that enrolments in these two levels of education tend to grow considerably faster than in primary education. It is easy to explain this discrepancy in the growth rates of the different levels where primary schooling is already universal or highly developed, where enrolments in this level can only follow the general increase in the population whereas the other levels can continue to expand. The problem takes a different form, however, in countries where universal primary education has yet to be achieved.

Table 20 compares annual growth rates in primary, secondary and higher education, distinguishing three different types of country in terms of their enrolment rates for children aged from 6 to 11.

In Africa and Latin America enrolments in secondary and higher education are growing faster than in the primary sector in every category of country, even

TABLE 20. Annual growth rates of primary, secondary and higher education enrolments between 1960 and 1975 for different countries depending on their primary enrolment rates in 1975

	Primary enrolment rates achieved in 1975		
	Under 50 %	50-85 %	Over 85 %
Africa			
— Primary	5.7	5.6	8.1
— Secondary	12.7	10.4	14.0
— Higher	15.8	10.8	19.1
Latin America			
— Primary	4.5	6.1	4.3
— Secondary	9.2	10.7	7.8
— Higher	10.0	15.4	10.1
Asia			
— Primary	7.6	4.6	3.2
— Secondary	8.0	6.7	10.0
— Higher	9.6	8.6	8.8

SOURCE Division of education statistics, op. cit., pp. 74-83, and 108-121.

in countries where the 1975 primary school attendance rate was under 50 per cent In Asia the difference in rates is smaller, but the pattern is analogous. It seems then, that in spite of declarations of intent, the aim of generalizing primary education has not always been accorded the priority one might logically have expected. This is because, once primary education has expanded to a certain level in those areas where demand for it is strongest, its further generalization often becomes politically less sensitive than the issue of access to the different levels of post-primary education. For the fact is that as the education system develops, making it harder to find work armed solely with a primary-school certificate or, in some cases, with a lower-secondary-school certificate, the main thrust of demand shifts naturally towards the higher rungs of the education system.

Measures taken to cope with this pressure depend on the country's social, economic and political system. Certain governments which apply models of planned economic and social development have succeeded in establishing quite rigorous systems of selection to control access to post-primary education in accordance with development requirements and available resources. Such has been the case in Tanzania, for example, which has expanded primary education very rapidly (1977/78 enrolment rate: 90 per cent) while controlling access to subsequent levels of education. As a result, the rate of transition between primary and general secondary education was about 6.3 per cent in 1976 (15 per cent if one counts all forms of education), and the government expects to bring this rate down to 2 per cent in 1984.[1]

It should be pointed out that even here instituting a system of rigorous control raised problems, and that, initially at least, the government was obliged to acquiesce in the development of a parallel private system which in 1976 still had 5,000 pupils in the first year of secondary education, alongside the 9,000 attending the state system. In 1978, the authorities decided not to recognize any further private schools and no longer to allow pupils to transfer from the private to the state system.[2]

What this experience shows is that the chances of success of a policy aimed at controlling the expansion of post-primary education depend not only on the establishment of fair selection procedures but also, and especially, on a radical reorientation of demand for schooling. It is just such a reorientation that the Tanzanian authorities have sought to achieve by every possible means, including reform of the primary system. They hope, by strengthening political education and by achieving a closer association between school and work, to arrive at a situation where primary education leads directly into working life, and where children and their parents look upon it as a complete education in itself, rather than as a preparation for the higher levels of learning.[3]

1. D. Court and K. Kinyanjui, op. cit., pp. 368, 379, 393.
2. D. Court and K. Kinyanjui, op. cit., p. 379.
3. B.R.V. Mmari, "Attempts to link school with work: the Tanzanian experience", in *Prospects*, Vol. VII, No. 3, 1977.

(ii). Reducing costs

One often encounters considerable differences in the unit costs of primary education and those for the other levels of education. Table 22 gives a general idea of these differences in the different regions of the world. These figures undoubtedly need to be handled with caution since they are aggregate figures, concerning current spending only, based chiefly on public spending. What is more, they represent regional averages, concealing a very wide spread of costs between countries. In spite of these reservations they may be taken as giving a rough idea of relative costs, indicative of the considerable gap between unit costs of higher education and primary education, especially in Africa, where the ratio is approximately 1 to 60.

TABLE 22. Unit costs of primary and higher education in the different regions of the world in 1974 (figures converted into US $)

Region	Primary education unit cost	Higher education unit cost	Higher education unit cost / Primary education unit cost
Africa	50.4	2 941	58.4
Asia	78.7	556	7.1
Latin America	87.0	757	8.7
Oceania	325.4	2 197	6.8
Europe	549.3	1 346	2.5
United States, Canada	1 734.2	2 662	1.5

SOURCE J. C. Eicher and F. Orivel, op. cit., pp. 20-24.

The next question is, to what extent can these differences be reduced by cutting the cost of post-primary education? The answer appears complicated when one considers the wide range of factors capable of accounting for the present situation. In recently-independent countries, for instance, it quite often happens that nothing has been done to modify wage scales inherited from the past, while more generally the organization of establishments, supervisory and equipment norms, even the characteristics of the buildings, are all modelled on those of the developed countries. In addition, higher education (and even secondary education) still makes heavy use of foreign teachers. Lastly, we would point out that higher-education unit costs may be inflated by the small number of students attending certain institutions.

It seems, therefore, that in these countries the reduction of costs entails not only measures to ensure more efficient use of existing resources (although these may have a by no means negligible impact) but also more radical measures directed at the deeper-seated causes, such as the pay structure in the civil service, with repercussions going well beyond the education system as such.

(iii). Mobilizing new resources

Lastly, there is the mobilization of new resources. This has already been done in a number of countries, moreover, with local communities being asked to take the initiative in accelerating the expansion of the education system. This policy does offer genuine possibilities, as has been demonstrated by certain schemes, such as the "Self-help" movement in Kenya, for example. Here, local communities have played a notable part in the rapid expansion of the education system, in particular founding their own secondary schools, known as "*Harambee* schools", and taking into their own hands the building and maintenance of primary schools, especially in the countryside.[1]

It should be pointed out, though, that while this kind of strategy does help to speed up the overall development of education it does not necessarily contribute to the reduction of disparities. As D. Court and K. Kinyanjui [2] note, referring to the Kenyan experience:

> In the heyday of secondary-school expansion in the 1960s the *Harambee* movement in Kenya represented a genuine community response to a perceived need. The need was seen to be that of more schools, and communities throughout the country which felt deprived organized themselves to put up money for school buildings. The Government was at first nervous about the challenge to manpower plans presented by this uncontrolled expansion, but then accepted the necessity for regulation and support and viewed this in part as a strategy for equalization through rewarding regional initiative. However, the prospect of Government take-over or contribution in the form of teachers and so forth quickly itself became the main object of community strategy as a means towards expanded educational facilities. Because those communities with greatest resources were best-equipped for self-help and its associated pressure on Government, *Harambee* for secondary schools tended in the long term to exacerbate rather than reduce regional inequalities. More recently it has been criticized in some of its manifestations as a device for popular mystification and a form of regressive taxation.

In other words, the strategy of mobilization of local resources is undoubtedly promising, but it is by no means a panacea. Without proper control by the centre it is more likely to exacerbate imbalances, inasmuch as a community's financial possibilities depend on its degree of development. It becomes a factor in favour of equality only where a balance is struck between the unequal dynamism and capabilities of different communities and the regulatory and compensatory activities of the central authorities.

Another approach that has aroused growing interest in recent years is that of self-financed education, through the productive work carried on by the school. Combinations of education and production form part of the far-reaching reforms recently introduced in several countries, including Benin,

1. D. Court and K. Kinyanjui, op. cit., pp. 348, 355-357; J. Anderson, *The organization and financing of self-help education in Kenya*, Paris, IIEP/Unesco, 1973.
2. D. Court and K. Kinyanjui, op. cit., pp. 397-398.

Botswana, China, Cuba, Panama, Tanzania, Vietnam and others. To be sure, the principal motives behind these reforms are first and foremost pedagogic, social and political in nature, but the hope that the pupils' labour will also be able to offset the cost of education does constitute a secondary consideration.[1] As the founder of several programmes linking study with work in Botswana, P. van Rensburg, has written: [2]

> The use of production to finance education may be taken as the minimum benefit of any programme, the lowest common denominator. Even the richest countries cannot afford to provide all the educational facilities which their societies demand and expect. Resource-constraint operates everywhere, but most severely in the Third World. There is also the problem of resource-allocation, with a general tendency to provide high-quality facilities for a minority, leaving little or no educational resources for the majority. The involvement of those being educated and trained in production work can create and generate substantial resources to help overcome the constraints. This might entail the production of income-yielding goods and services or the creation of developmental infrastructure, in some cases simply utilizing the student labour without any training involved, in other cases using the skills being acquired in more vocationally oriented training.

The difficulty arises from the fact that we rarely have much information on which to assess the economic results of these experiences with any precision. Margaret E. Sinclair has however attempted an initial synthetic appraisal of various reforms. Concerning the possibility of self-financing, the author draws these guarded conclusions:

> Regarding the objective of offsetting educational costs through sale of pupils' produce (or using foodstuffs grown by pupils for school meals), there is scattered evidence that some schools achieve good results while many are less successful.[3]

So programmes under way need to be looked at in greater detail, and in particular attention should be paid to the conditions of success or failure.

(b) Adapting school to local requirements. The reduction of disparities in the development of education calls for something other than the mobilization of financial resources. Building schools all over the place will not guarantee that children will flock to them, and certainly cannot in itself keep them coming back day after day. As we have seen earlier, the expansion of education in deprived areas not only has to cope with a lack of—or poorly-organized—

1. J. K. Nyerere, *The Arusha declaration: ten years after*, Dar-es-Salaam, 1977, p. 13; F. Castro, *Discurso pronunciado en la clausura del Secundo Congreso de la Union de Jovenes Comunistas, 4 de abril de 1972*, La Habana, Ediciones GDR, No. 3, pp. 32-33.
2. P. van Rensburg, "Combining education and production: situating the problem", *Prospects*, Vol. VII, No. 3, 1977, p. 353.
3. M. E. Sinclair, Introducing work-experience programmes in Third World schools", *Prospects*, Vol. VII, No. 3, 1977, p. 366.

educational services but also with the low attendance of certain groups and the low retention of children inside this service. What is involved, here, is not the simple extension of the school infrastructure but the actual way a given service and its clientèle interact.

Certainly this situation can be partially rectified by acting upon the educational service to improve its physical accessibility and its quality. Measures such as a more evenly-spread national educational network, the implementation of measures to facilitate access by cutting time spent in travel (school buses) or reducing the frequency of journeys (school dining-room, boarding facilities), a fairer distribution of teaching material (books, stationery, etc.) can all have a far from negligible impact on school retention. This is why, over the last ten years, a growing number of countries have attached paramount importance to rationalizing the school map and to local integration of educational services.

But at the same time people have grown acutely aware that these measures are insufficient, and that they need to be supplemented by other types of action affecting the very conception of the school, its curricula and teaching methods. In certain countries, in certain economic and social development contexts, this realization has given birth to radical reforms attacking the whole finality of the school itself. We have already referred to Tanzania, where the traditional aim of primary education, namely preparing children for secondary education, has been thrown overboard. The new primary school which has taken its place in this country is conceived as a terminal school whose direct purpose is to integrate children into the new socialist society now under construction. This reorientation has produced far-reaching changes not only in the curriculum (introduction of new subjects and productive work) but also in organization (utilization of local skills in the teaching of certain subjects and close involvement of the village authorities in the education decision-making process).[1]

In other countries the reforms have often been less radical and do not come to grips with the ultimate goals of primary education. Among measures envisaged to facilitate the extension of education to deprived groups, at least two merit particular attention from a regional standpoint. The first concerns the adaptation of course content to living conditions in different communities, the second the use of local languages as a vehicle of instruction.

(i). Adapting the content of education

Often, this adaptation involves courses directly built around rural development intended for children living in deprived zones. The basic assumption is that this kind of ruralized education is better-suited to the needs of people living in these regions and that it is therefore more likely to incite parents to send their children to school and keep them there; in addition, it is expected to assist young school-leavers as they enter adult life and to have a more direct impact on local development. To be fair, the grounds for these assumptions are a matter of debate and controversy. To what extent is a more practical bias in

1. D. Court and K. Kinyanjui, op. cit., pp. 380-384.

education really better-suited to the needs of rural communities when, for example, the structures of domination and exploitation in these same communities remain unchanged? How far can one adapt the content of education to local conditions and thus diversify it without thereby compromising the very goal of equal opportunity in whose name diversification is advocated? In other words, is there not a risk of making it even harder than before for children from deprived zones to make the transfer to the higher rungs of the education system?

For Heyneman, there can be no doubt as to the answer.[1] He vigorously opposes the idea that children ought to be taught different things according to where they live. But he goes further and questions the whole notion of the functionality of a more practical, more vocationally-biased education for the majority of children not destined for secondary education. To justify the introduction of farming or any other practical subject into the primary school, one must first make sure that this subject really can be learnt efficiently in school and that it does not duplicate what the child learns at home as a matter of course; it needs to be shown that this subject meets a parental demand, that the financial and cognitive costs of teaching this subject stand comparison with other possible subjects, and that it will improve the productivity of these children after school.

The author finds no positive answers to any of these questions and calls for a single curriculum based on mathematics, science and languages. He claims that by concentrating efforts on these relatively general subjects children from deprived rural areas can be given more equal opportunities of pursuing their studies while preparing those entering working life to cope with the technological and social changes they are likely to encounter in tomorrow's world.

Not everybody agrees with this view of teaching curricula. In certain countries steps have already been taken to give a more practical slant to education in rural areas. This is the case in Burundi, for example, where a reform based on the ruralization of official primary education has been implemented since 1973. The still-limited extent of official education has meant that in fact this reform affects only around 20 per cent of the school-age population in rural areas. Alongside this official education there has grown up, in the last ten years, a non-formal education system known as *Yagamukama* (the Voice of the Lord), which is organized by each parish. *Yagamukama* centres concentrate mainly on literacy, religious instruction and practical courses related to local development. Children attend two days a week only (which means that three different groups can be attended to weekly). In spite of their limited programme and mediocre quality, which is the result of a patent lack of resources, this type of non-formal education has encountered growing success over the years, which would indicate that it meets a real need. In 1976 there were some 256,500 enrolments in *Yagamukama* courses against 131,200 in the official primary system.

1. S. Heyneman, op. cit., pp. 140-145.

It is hard, in the present circumstances, to predict the likely social consequences of these developments. Only a systematic evaluation of this type of experience to gauge their influence on equality of opportunity and their economic performance could provide us with the facts on which to base informed discussion and decision-making.

(ii). Using local languages

Another question that lies at the heart of any regional approach to the problem of disparities concerns the use of local languages or dialects. The most obvious aspect of this is that children who at home speak a different language from the one used in school are handicapped. They have difficulty following textbooks and their teachers' explanations. The poor showing of children in northern and north-eastern Thailand is almost certainly partly due to the fact that the populations of these regions do not speak central Thai.[1] More generally, it may be supposed that the fact of not mastering the vehicular language in school tends to discourage children and may have an adverse influence on school attendance. This is why several countries have introduced local languages into the early years of schooling in order to ease familiarization with the official language of the education system. This has happened in Peru for instance, where, after several centuries of proscription, the Indian languages (Quetchua mainly) have been allowed on a limited basis in rural schools under the terms of the 1972 educational reform.[2]

Even so, while there are obvious educational advantages in using the child's mother tongue, the systematic use of different local languages as teaching vehicles does raise serious problems. Many developing countries contain a multitude of languages and dialects, many of which have never been subjected to systematic linguistic study. India is most often cited as a typical case of linguistic complexity. But many other countries, in Africa for example, are in a similar situation.[3]

Clearly, in these circumstances, the introduction of mother tongues into teaching programmes is by no means easy. The first requisite is to determine at which degree of linguistic differentiation to draw the line. Is it adequate to select a few major regional languages, or should equal importance be accorded to all? This delicate question is further complicated by the fact that, in many cases, it is necessary to choose standard languages from among several ranges of dialects.[4] Next, it is necessary to develop appropriate teaching aids (gram-

1. Office of the National Education Commission, *Factors affecting scholastic achievement of the primary school pupils*, Bangkok, 1977, p. 58.
2. A. Escobar, J. Matos Mar and J. Alberti, *Peru país bilingüe?*, Peru problema 13, Instituto de Estudios Peruanos, Lima, 1975, p. 61.
3. Ayo Bamgbose, "Linguistics and language education: problems and prospects", in Unesco, *Anthropology and language science in educational development*, Paris, Unesco, 1973, Educational studies and documents, No. 11, pp. 17-30.
4. M. Hutterer, "Problems of choosing a normative standard language from a range of dialects", in Unesco, *Anthropology and language science in educational development*, Paris, Unesco, 1973, Educational studies and documents, No. 13, pp. 50-51.

mars, textbooks, etc.), to adapt teaching methods, and to prepare teachers to apply the new strategy. These are complex tasks which require close co-operation between educators and linguists. Their cost is frequently beyond the financial resources of the education sector.

As a result of these practical and financial difficulties, more than one country has confined itself to a single language for teaching purposes. Some have maintained the language introduced by the former colonial power, while others have replaced this by a language of national origin. It should be pointed out, though, that many governments are concerned to promote a single national language for political reasons chiefly, which in turn raises the problem of national unity. As J. M. Mazaba and E. Nthepe [1] have written:

> The delimitation of political boundaries originated from rivalries that had nothing whatsoever to do with local life and often split ethnic groups on either side of territorial boundaries, while assembing under a single banner groups that have no linguistic ties with one another. Concern for national unity will therefore prompt the national authorities to try to undermine the centrifugal forces that act on the various peoples brought together to form the nation, forces which are naturally calculated to entice them across the frontier. Linguistic communication is one of these forces, and one can easily understand the significance of teaching in the language that is used generally throughout the country, the language of the former colonizer, which has been entrusted with the mission of participating in the creation of national feeling.

The problem is to know under what conditions and how the forging or preservation of national unity is compatible with respect for, or even the advancement of, cultural and linguistic diversity. P. Furter's study of some industrial countries in western Europe tends to show that the sometimes violent imposition of a single language and culture in these countries has never entirely managed to eliminate the regional problem, which has in recent years become a topical issue once again. It also shows that the language question is merely one aspect of a far deeper-seated problem connected with the complex relations of economic and political domination between the centre and the periphery, and that for this reason the solution to the problem of cultural diversity is governed by the more general evolution in the direction of a more democratic society.[2]

2. Organizing access to post-primary education

The transfer from primary education to subsequent levels of the education system, from which only a small proportion of the school-age population is able to benefit, raises another problem, namely that of selection. Financial constraints, the much higher unit costs of secondary and higher education, and the labour market's limited capacity of absorption, mean that in most countries it is impossible to set as an immediate objective the satisfaction of all demand

1. J. M. Mazaba and E. Nthepe, "The mother tongue and the teaching language", in G. Mialaret, *The child's right to education*, Paris, Unesco, 1979, p. 168.
2. P. Furter, op. cit.

for schooling at every level. At some moment or another in the school career, depending on the structure and the degree of development of the education system in question, some kind of selection becomes inevitable. In certain countries this selection occurs at the end of the primary system,[1] while in others it takes place at the end of the first section of the secondary system or even at the moment of entrance to higher education.

But the precise moment at which the bottleneck is reached matters little; what is clear is that resentment of unequal access to the different levels of post-primary education is exacerbated by the fact that the distribution of scarce places to a large extent determines subsequent access to privileged positions in society. Selection can be made palatable only if the criteria of selection seem to give all candidates an equal chance. What is at issue, here, is the very ideology which underpins the unequal distribution of privileges as between citizens. As Court and Kinyanjui note in their study on Kenya and Tanzania:

> The reasoning behind the meritocratic ideal is that inequality—both regional and individual—is more bearable if each individual is convinced that he has had an equal chance to succeed and does not question the criteria upon which merit is determined and, consequently, opportunities of mobility.[2]

In other words, given the relations that exist between educational level and socio-economic status, the fact of controlling transfers between the different levels of the education system amounts, to a certain extent, to organizing social mobility. This is why, in many countries, the "fair" allocation of available places in these different levels often tends to become a thorny political problem.

1. As can be seen from the table below showing the rate of transfer from primary to secondary education, this situation seems to arise more frequently in Africa than in the other parts of the world. It should be pointed out, however, that this table gives only an incomplete idea of the true situation in each region. For a start, it covers only 65 developing countries for which data were available. Secondly, the rate shown here is the ratio between total enrolments in the final year of primary education in year t (generally 1975) and new entrants in the first year of *general secondary education* in year $t + 1$. The overall transition rates (aggregate for all types of education) may be greater in those countries with highly diversified secondary-education systems.

Rate of transition between primary and secondary education: number of countries per category

	<25 %	25-50 %	50-75 %	75-100 %	Total
Africa	10	9	4	2	25
Arab States	1	2	4	7	14
Asia	1	2	4	3	10
Latin America	—	4	6	6	16
Total	12	17	18	18	65

SOURCE Bureau of Statistics, Unesco.

2. D. Court and K. Kinyanjui, op. cit., p. 332.

Improved geographical distribution of schools is an essential first step towards solving this problem. In the newly-independent countries, the secondary-school network is usually heavily distorted in favour of the capital and a handful of the more developed regions. Moreover, with scant exceptions (such as Cuba), secondary schools are always located in the towns. The two measures generally used to rectify this situation are modifications in the regional distribution of schools and the development of boarding facilities. The efficiency of these measures is enhanced when supplemented by others designed to do away with financial obstacles to access. However, the key question as to who shall benefit from the limited number of places available remains open.

(a) Selection on the basis of intellectual aptitude. The choice of selection criteria is a particularly delicate matter, for it must appear fair to the entire body of candidates. For this reason, the justification of this choice will always be intimately bound up with the dominant social values of each society.

What we find in practice, however, is that at bottom the debate always revolves around the question: what relative importance are we to attach to candidates' knowledge and their intellectual capacities? In many instances these are the sole criteria used, although different countries apply them differently. Sometimes selection is based purely on school examination results, elsewhere it is based on scores obtained in a range of tests (knowledge, intelligence, personality, etc.), while in certain cases a combination of the two is preferred. There is a vast literature—much of it critical—on both these approaches.[1] School examinations are attacked for their lack of objectivity (different examiners arrive at different results), and the fact that they measure acquired knowledge but not the child's future development potential. Standardized tests ought in principle to be able to overcome this twofold deficiency. But they in turn are criticized on the grounds that it is always risky to assess a child's intellectual aptitudes on the basis of a single yardstick which can never be other than partial. They are often accused of systematic socio-cultural bias in their assessments, which penalizes deprived social groups (rural zones, cultural minorities, the lowest strata on the social ladder). This last criticism is particularly relevant to the issue of regional equality.

Certain countries have tried to devise tests that do not systematically advantage one group or another. Kenya is one such country. Here, the government pays close attention to ensuring that the administering of these tests is efficient and exemplary. Forms are printed abroad, and complex security measures are taken to prevent leaks or irregularities. As D. Court and K. Kinyanjui explain, this concern for impartiality flows from the social and political philosophy of the country. In a society such as Kenya, with its wide disparities, with a social system based on individual merit, the strict application of standardized examin-

1. See, among others, R. Reuchlin, *L'orientation pendant la période scolaire: idées et problèmes*, Strasbourg, Council for Cultural Cooperation of the Council of Europe, 1964; H. Pieron, *Examens et docimologie*, Paris, PUF, 1969.

ations is the best guarantee against official discrimination. The inequalities that inevitably accompany the selection system are easier to bear when each participant has the feeling that he has had the same chances as everyone else through the application of objective criteria.

The government's second concern has been to improve test content, and particularly that of the national primary-education certificate. To this end it has sought to adapt knowledge and intelligence tests in such a way as to avoid systematically handicapping certain groups.

> After some early euphoria about the potential of examinations as devices for improving equity, the limitations and complexity of this approach have become apparent. For example, one of the early assumptions was that the main source of inequality in the critical CPE examination was that its content gave disproportionate advantage to urban students. The corresponding expectation was that by the insertion of a context familiar to rural students, along with the replacement of questions measuring memorization by those seeking to elicit reasoning, observation and understanding, this would have the effect of reducing the impact of socio-economic status which was felt to be at the heart of performance inequalities. Carefully constructed items of this type now form the main content of the CPE. It is dangerous to try and summarize conclusions of sophisticated and incomplete research into the impact of this examination over time in Kenya, but some tentative conclusions of the work are relevant to our theme.[1] It is now clear that while, as mentioned earlier, certain types of question can serve to reduce differential advantage, the more general effect is to increase the gap in collective performance between different parts of the country and hence to compound established advantage and regional disparity. The magnitude of difference is in some instances very sizeable. For example, there are some districts where the aggregate level of performance of every school in the district equals or exceeds the best school in another district. It is equally clear that the differential impact of the examinaiton has less to do with the rural or urban location of schools than with their internal quality. Pupils at high-quality rural schools reach much higher levels of performance than those at low-quality urban schools, and come close to the attainment of students at high-quality urban schools without making allowance for the reinforcing impact of SES factors on the performance of pupils at the latter type of school. Examinations requiring higher-order intellectual skills may within limits be able to partially offset the advantages of socio-economic background, but they accentuate the advantage of school quality. There is both dilemma and opportunity in these data. The dilemma is the conclusion that the educationally beneficial type of examination—i.e., that demanding higher-order types of intellectual skill—provides little scope for serving regional equity by counteracting school-quality factors. The opportunity is implicit in the conclusion that school quality makes a difference to individual performance and the scope that this provides for diffusing opportunity.[2]

1. The work referred to here is that of H.C.A. Somerset, which is reported in "Who goes to secondary school? Relevance, reliability and equity in secondary school selection", as well as in several unpublished papers.
2. D. Court and K. Kinyanjui, op. cit., pp. 363-364.

These observations on Kenya well illustrate the limits inherent in any system of selection based on acquired knowledge and children's aptitudes. It is difficult to fashion such systems so as to do justice fully to all the groups concerned. To use them in order to compensate the backlog of handicaps already accumulated by certain groups prior to selection would prove even more complicated.

(b) Introducing quotas. It is for this reason that certain countries, without abandoning the criterion of intellectual aptitude, now apply it more flexibly by explicitly seeking equal representation for all groups. On this principle, quotas are applied with more or less rigour on the basis of regional factors, or of social ones (socio-professional categories, ethnic groups, sex, etc.).

The choice of criteria for use in the establishment of quotas or, in certain cases, of a preference system, depends on the social importance attached to different types of inequality. In several recently decolonized countries the choice has mainly fallen on the regional criterion (in preference, for example, to the rural-urban criterion). As we pointed out earlier, this choice flows from the fact that in these countries the realization by different regional communities of their educational backwardness can quickly pose a threat to national unity. This danger, moreover, is all the greater when national identity is still fragile and when, as often happens, regions coincide with ethnic, linguistic and religious differences.

While in many countries the system of regional quotas is regarded as a political necessity, its application raises problems of its own.[1] The most sensitive point is that, under a quota-based allocation of places, in regions where the primary system is less well-developed places are awarded to children with results inferior to those achieved in the more educationally-advanced regions. It can even happen that the system has to accept pupils with scores well below average. In such cases the principle of equality clashes with that of efficiency. As W. T. S. Gould points out with reference to a survey of admissions policies in East African countries, this is an easy argument for the most-favoured regions to raise, as they may well be concerned that their legitimate interests are being sacrificed to redress imbalances for which they are not responsible.

> Richer areas argue that the investments of scarce resources ought to yield as large a return as possible, that such returns are highest in areas of already higher levels of development and that a vigorous regional policy is a luxury that poor nations cannot afford to pursue.[2]

In fact, the controversy over quotas is an offshoot of another, broader debate concerning the possibilities and the limitations of a policy of regional equalization in general. As S. Heyneman has written:

1. For a general discussion, cf. S. Heyneman, op. cit., pp. 363-364.
2. W. T. S. Gould, "Secondary school admission policies in Eastern Africa: some regionalisms", in *Comparative education review*, Vol. 18, No. 3, October 1974, pp. 374-387.

> Each nation needs to weigh its own priorities. Decisions will be based upon the political pressure of social aspirations versus the political pressure of economic aspirations. But it is clearly a political decision.[1]

(c) Applying new selection criteria. A second category of country has gone further, by adding other selection criteria to that of intellectual aptitude, such as the pupil's social attitude, his political commitment, his performance in manual works, etc. Here too, clearly, the choice of selection criteria and their relative importance is by definition a political problem. There is no such thing as a socially neutral criterion and, consequently, no such thing as general rules. Whether candidates feel selection to be fair or not depends directly on the degree to which they accept the social values that underlie these selection criteria.

It should however be noted that the addition of new criteria does not necessarily entail substantial changes in the results of selection. In Tanzania, for instance, in addition to criteria based on academic work, attempts have been made to take into account others supposed to reflect more accurately the broader aims of Tanzanian education (personality, attitude to work). According to the study by Court and Kinyanjui [2] there does, however, seem to be a close relation between results obtained in school exams and those in other types of evaluation. At the beginning of the experience at least, very few pupils who had passed school exams were refused for failure to satisfy the other criteria. In 1976, in fact, this percentage was no more than 0.1 of candidates sitting for the school-leaver's certificate (end of first cycle of secondary education). Conversely, scarcely any pupils were selected if their academic results were judged inadequate.

What we also find, moreover, is that at least in Africa [3] the strict application of selection criteria in the state-controlled education system is often impeded by the greater or lesser development of alternative schools run by the private sector or local communities. We have already looked into the adverse consequences of this state of affairs for equality in education. Over and above the issue of selection policy, therefore, we are faced with another, more fundamental, question as to the rôle of the state in educational development.

It is important therefore to bear in mind the limitations of selection as an instrument in any policy aimed at reducing disparities. For one thing, the fact of guaranteeing each region more equal opportunities of access merely touches on the most visible part of the problem. Other kinds of inequality lie beyond the question of access, especially where quality of educational service and retention of pupils are concerned.

Next, a policy aimed at equality cannot restrict itself to levelling inter-regional

1. S. Heyneman, op. cit., pp. 120-125.
2. D. Court and K. Kinyanjui, op. cit., pp. 386-387.
3. Obviously, for historical reasons, and because the level of development of the school system varies greatly, the problem assumes different forms in different regions. The rôle traditionally played by private education in Latin America, for instance, is very different. This has generally been an élite form of education of high quality.

disparities. As we pointed out above, the intra-regional dimension is an essential part of any educational planning that takes the region as its frame of reference. Selection based solely on regional averages is liable to mask other very sharp disparities: between urban and rural areas, between the sexes, between social groups, etc.

Lastly, we cannot dissociate the reduction of disparities in the development of schooling from the reduction of disparities in social life as a whole. Giving different groups of children more equal educational opportunities is not an end in itself. One must see to it that they subsequently have the same opportunities of putting this education to good use economically, socially, culturally, and even politically.

B. What are the implications for education planning?

The questions discussed above figure among the new concerns of governments seeking to reduce regional disparities in education. But incorporating this objective also implies alterations in planning perspectives. Case studies point to a number of changes that are indispensable for anyone wanting to go beyond a policy of global expansion of the education system and to take into consideration imbalances inside the system as well. The first thing that needs to be changed is the data base; next, and most important, come the organization and methods of planning, both centrally and locally.

1. The need for an adequate data base

It is often difficult, using currently available data, to produce an adequate diagnosis of disparities, i.e., to measure their precise extent and observe their evolution over time. As pointed out earlier, this is not merely a problem of incomplete coverage (certain types of data are not available) but also one of unreliability (existing data are often of poor quality with no indication of probable margins of error) and unsuitable presentation (information is gathered and consolidated to suit the needs of central management, expressed in terms of national averages, far more than to highlight disparities).

To remedy this situation, it is therefore necessary to review the kind of data required in the light of the new planning objectives; it is necessary to devise and organize data-collection procedures as well as information-processing and analysis methods. These different aspects of the question have already been dealt with in Section II, under "Measuring the disparities", and there is no point in covering that ground again here. It may be useful to recall, however, that to improve the present state of information two lines of research and development appear to warrant priority treatment.

First, the development of simple, inexpensive methods of information-gathering. The new tasks assigned to planning (which include the reduction of disparities), and the gradual improvement of diagnostic techniques, have stimulated a demand for more varied and more detailed information. But when it comes to the actual job of data-gathering this demand should not merely result in

additional work and more complicated versions of conventional methods: that would simply further jeopardize the quality of information obtained. In some cases the problem is simply one of modifying or supplementing existing questionnaires. It often happens that the age-structure of school attendance as a whole is known, but not that of new admissions. Because so many children are admitted to school late, and because of the need for accurate measurement of access to the school system, facts relating to new admissions are obviously vitally important.

In other cases, data-gathering methods themselves need to be modified. The Unesco Bureau of Statistics is currently working with national teams from several countries to explore the possibility of developing simplified, inexpensive, systems using sampling techniques.[1] The Bureau is also making similar efforts to develop systems of individualized data, in particular by codifying cohorts, in order to arrive at a more precise measurement of repeated years and wastage.[2]

It should also be pointed out that continual aggregation tends to dilute the original wealth of information. This aggregation is doubtless made necessary by the requirements of statistical publication (yearbooks in particular, with their necessarily restricted format); even so, raw data must be made available where analysis demands this.

Smooth co-ordination with the other bodies (private or public) responsible for data-gathering is also desirable. This is the case, for example, with data on private education, on out-of-school or non-formal education, or again on the school-age population. Similar co-ordination with research institutes might also be thought essential. Many of the facts that planners would like to have at their disposal in order to make their diagnosis simply cannot be supplied by statistical units alone, especially where qualitative or explanatory data are concerned. It seems appropriate to expect research to play a growing rôle in the development of an adequate data base for education management. Present national research capabilities are inadequate in many developing countries, especially in the poorest of them. Further, for historical and structural reasons, planners often make bad use of available research findings. It would be a good idea, therefore, both to strengthen national research capacities and to foster improved co-ordination between research, statistics and management. As a first step, several education ministries have now set up their own research departments especially for the task of building an adequate data base and to ensure timely availability of the facts on a given subject. Clearly, though, closer collaboration between research and the decision-making process calls for other measures which exceed the capacities of a single ministry, affecting the very structure of research, financial and human resources and, finally, the definition of a national research policy. Such policies are unfortunately lacking in many countries.

1. Unesco, *Wastage in primary education*, op. cit., pp. v-vi.
2. See Bureau of Statistics, *Les méthodes de codification des effectifs scolaires*, Paris, Unesco, 1979, pp. 3-19.

2. Adapting central planning methods

Clearly, it will take more than planning based on national averages to reduce educational disparities. This reduction does not spontaneously accompany overall expansion of enrolment. On the contrary, it presupposes deliberate social action, whose first imperative must be the regionalization of educational policy objectives and resources. In practice, this regionalization can take different forms. For instance, it may apply solely to the educational sphere, or conversely it may be intersectorial in character. Also, it may be accompanied by a greater or lesser measure of decision-making decentralization. We cannot state in absolute terms that one kind of regionalization is better than another. What works in one country may not necessarily do so in another. This is not the place to assess different regionalization policies; rather we would draw attention to a number of technical problems apparently common to all attempts at regionalization. First, there is the problem of defining a regional framework appropriate to the objectives of the *action* one wishes to implement. A first approach, such as the one presented in Section I, serves an *analytical* purpose and consists in dividing the national territory into regions that are homogeneous from one or more points of view. This is especially useful in identifying deprived regions requiring special treatment in order to achieve a more even national rate of development. This is the approach generally adopted in establishing what are known as programme regions. Here, the accent is placed primarily on problems of allocation and distribution between the different regions rather than on the dynamics of the process and the development potential within each region. But there is no evidence that a region that is homogeneous in terms of its educational backwardness has the necessary potential for self-development. Which is why a second approach, which may in fact be superimposed on the first one, draws regional boundaries on the basis of the functional coherence in relations between the different local spatial units. We then speak of functional or polarized regions, to distinguish them from the homogeneous region.

We are concerned here with the organization of planning inside a region. Now, the principal dynamic governing the workings of social life within a given regional area stems from the fact that the population is distributed among units of different sizes, offering neither identical services nor living conditions. To define a functional region, then, it is necessary to start by analysing the services on offer, and their clientèle, in each unit. By studying the direction and intensity of population movements and exchanges we can identify the area of influence of each unit and rank them in order of importance, with due regard to reciprocal influences among them.

Hungary offers a good example of this twofold approach. At the beginning of the 1960s the accent was placed on the development of whole regions which, for historical reasons, had remained under-developed (compared with the northern and north-eastern regions, for example). In 1971, a new regional planning system was introduced; here the concept of a homogeneous development region

gave way to that of a polarized socio-economic region. By combining several different classificatory criteria (population size, availability of economic resources, existing amenities, regional rôle and development potential), the country's towns and villages were divided into five categories: the nation's capital, major regional centres, lesser regional centres, local centres influencing towns in the surrounding area, and other centres having no specific rôle. It is important to note that the change in the concept and in the definition of the region is not a purely technical affair: it expresses a deeper-seated modification in the way development itself is viewed. While Hungary's regionalization was based on an integrated inter-sectorial approach right from the start, policy-making in the 1960s continued to be largely centralized. Since 1971 there has been a gradual lifting of central regulation and intervention, with decision-making powers being devolved to local level. For the authorities, this new approach was supposed to improve the chances of success for their twin objectives: firstly, to achieve a better-balanced overall regional development through more efficient use of local resources, and, second, to reduce the gap in living conditions between the different types of town, by creating adequate local services, or at least by facilitating access to these services. In the specific context of Hungarian society this regional approach appears to have been an effective instrument in the reduction of disparities—in the field of education among others.[1]

Another problem concerns the mechanisms whereby resources are allocated between regions and, inside them, among the local communities responsible for the running of educational services. In the absence of any specific regional policy this important aspect of planning is frequently neglected, and central resources are allocated on the basis of the negotiating strength of the different parties concerned. The case study on Thailand demonstrates the consequences for equality of this kind of procedure. In this country the provincial primary schools are financed entirely by the Ministry of the Interior. Each of the districts (*amphoes*) submits its grant request to the relevant province (*changwad*) which, after verification, transmits it to the central authorities. Analysis of subsidies per pupil reveals considerable variations from one province to another (of the order of 1 to 3), and that in the absence of precise allocation criteria districts submitting the heaviest demands obtain the largest share of resources. Table 23 shows that 20 out of 48 *amphoes* received grants equal to the amounts demanded, whereas 13 obtained more, and 15 less. It shows most of all that there is a generally positive relation between the demand put in and the size of the actual grant.

The findings of a survey of capital spending over a three-year period (1970-1972) point in the same direction; there was a positive correlation (+ 0.77) between the rate of expansion of the primary school (measured by the rate of transfer between class 4 and class 5) and capital grants obtained from central government. In other words, the provinces that obtain the most resources are those where educational supply is already best-developed.

1. S. Ferge, E. Havasi and J. Szalai, op. cit., pp. 230-232.

TABLE 23. Relationship between initial request per pupil and final allocation per pupil, lower-elementary level, 1972

Amphoe request to *changwad*	Final allocation				Total
	Less than 400	400-799	800-1 199	1 200 and more	
Less than 400	7	12	—	—	19
400-799	5	8	1	—	14
800-1 199	—	6	3	—	9
1 200-1 599	—	1	2	2	5
1 600 and more	—	—	1	—	1
Total	12	27	7	2	48

SOURCE K. Sudaprasert, V. Tunsiri and C. Ta Ngoc, op. cit., p. 258.

The question is how to change the present situation. Without wishing to replace the interplay of political negotiation by a series of mathematical models, it ought in many cases to be possible to improve existing procedures considerably by basing decisions on a number of objective, simple, criteria. These criteria would take into account the educational development of each region, its potential education needs, and its internal financial possibilities. A certain number of countries, including Thailand, have already begun to rationalize in this manner, by developing their own models for the allocation of central budget resources to the different provinces. Unfortunately, there are as yet very few systematic studies to provide us with a better view of the technical, administrative and political implications of the development and application of such models.[1] Also, there are very few capable of informing us about the impact of different financing systems on educational inequalities. However, what we can learn from the handful of existing studies [2] is that it is not enough to make sure that resources are fairly allocated among the regions, but that it is also necessary to ensure that all the different districts inside each region profit equally from investment in the education sector. As has been pointed out on several occasions, the region may be a very heterogeneous entity masking very sharp intra-regional differences: between town and country, between cultural groups, or again between socio-professional categories. There is no guarantee, *a priori*, that funds allocated to a given region will truly benefit the most under-privileged groups as intended. In other words, a more equal distribution of resources

1. For a synthetic presentation, see L. Wagner, H. Glennester and M. Woodhall, *The finance of education*, Milton Keynes, Open University Press, 1977; V. Morris and D. Verry, *Education, equity and income distribution*, Milton Keynes, Open University Press, 1977.
2. J. P. Jallade, *Public expenditures on education and income distribution in Colombia*, Washington, IBRD Staff Occasional Paper, No. 18, 1974; E. Byrne, *Planning and educational inequality, a study of the rationale of resource allocation*, Windsor, UK, NFER Publishing Co., 1974.

among provinces is merely a first step. It is based on the principle that all groups should have the same opportunities of access to education; but it cannot guarantee that each of these groups will have the same chances of grasping these opportunities.

3. Strengthening local planning

The questions raised above are bound to make the central planning process even more complex. However, the major challenge contained in the regionalization of planning surely lies elsewhere, in the changes it inevitably introduces into relations between the different levels of decision-making (central, regional and local). The policy of general expansion of the school system entailed its own corresponding working methods: planning was held to be a central administration exercise, in which regional and local bodies had only a minor rôle, or even no rôle at all, to play. It is hard to conceive, for technical and political reasons, that it is possible to go far towards differentiating objectives and programmes for each region or local community without involving the latter more actively in the decision-making process.

The concrete forms this participation can take depend once again on each country's traditions and political context. What they all have in common is that for regional and local echelons to take a more active part in the planning process it will be necessary to boost their technical and administrative capabilities. Several countries, including Peru, Indonesia and Nigeria, have attempted to introduce administrative reforms tending in this direction, accompanying such measures with personnel training and retraining programmes.[1]

However, the success of these programmes, and more generally that of planning at sub-national echelons, is in turn conditioned by the application of a whole series of techniques and methods specific to micro-planning. One cannot simply transpose traditional central planning techniques onto the regional and local levels. Micro-planning presupposes a change in the conception of planning itself. Work done by the IIEP on the school map (which is a vital part of micro-planning) has shown the need for compromise between the two decision-making levels, central and local.

> The adoption of the school map implies accepting certain 'rules of the game' which influence the very principles of educational planning. On the one hand, there must be no authoritarian planning system centralized in the capital and handing down its directives on where schools are to be located without any possibility of 'censorship' at regional level; equally, there must be no acceptance of a decentralized and partisan planning system favouring some areas to the detriment of others and producing inconsistency between national goals and steps taken at area level. What is needed is a hybrid system combining the advantages of the two.[2]

1. Cf. for example, C. Tibi, *Le rôle de la formation dans la planification de la réforme de l'éducation au Pérou*, Paris, IIEP, 1977.
2. J. Hallak, *Planning the location of schools: an instrument of educational policy*, Paris, Unesco: IIEP, 1977, p. 21.

Micro-planning aims essentially at matching decisions to local circumstances. In this sense, it entails diagnosis and preparing proposals for action in a different manner. Diagnosis here may be based on a more detailed analysis of the interaction between supply and demand for education at the local level, with working methods ranging from field surveys (in schools, families, at places of work) to the active involvement of the population in formulating its problems (research-action). Because the scope of its analysis is narrower, it can pay more attention to detail and deploy greater familiarity with the concrete problems and educational needs of the local population.

Where proposals are concerned, micro-planning makes it possible to diversify programmes of action while still basing them on general guidelines laid down by central government. It is becoming increasingly clear that general, uniform, measures chiefly benefit the most privileged sections of society (especially pupils in urban areas, where school attendance is highest already), but that they are scarcely suited to the special problems of other groups (marginal groups, rural population). In education, the right to diversified treatment within a unified system that guarantees continuity between the different types and standards of education may be regarded as an essential condition of greater equality.[1] This is true for problems of access and retention, and still more so for that of equalizing school results.

Further, planning is an ideal framework in which to involve people in the taking of decisions that concern them. From an ethical standpoint, this consultation forms an integral part of any process of endogenous development centred on human beings, and it is for this cause that it has been incorporated into the objectives of international bodies, Unesco in particular.[2]

As for the question of democratization in the educational sphere, participation may be considered both as an end and as a means. It is an end insofar as education, for marginal groups, is a process of consciousness-raising which ought to facilitate their participation in the life of the nation. But it is at the same time a means, since it is through consulation with the groups concerned that the education best suited to their needs and best-integrated into their environment can eventually be devised.

Several such schemes either have been or are currently being implemented in a number of countries, especially in adult education programmes (in India, Indonesia and Tanzania, for example) and in integrated local planning projects (Brazil and Guatemala, for example). Undeniably, the participatory method has not been an unmitigated success in every case. Quite the contrary, initial evaluations show that these methods have by no means achieved their final form, and that in any case their effectiveness depends largely on the social and

1. For more detailed discussion of the complex relations between unity and diversity within education systems see S. Tanguiane, "Education and the problem of its democratization", in *Prospects*, Vol. VII, No. 1, 1977, pp. 16-34.
2. Unesco, *Medium-Term Plan, 1977-82* (19C4 Paragraph 308), Paris, Unesco, 1977.

political systems.[1] But results seem to have been sufficiently encouraging for several countries to continue exploring this avenue, and above all for them to seek to put into practice its underlying inspiration, namely bringing the planning process closer to the people concerned.

In its broadest sense, micro-planning remains uncharted territory, and its methods and techniques—apart from the school map—are still insufficiently developed and tested. It is true too that there has been little co-ordination between macro- and micro-planning efforts. The latter can really demonstrate its effectiveness to the full only when conducted within a general framework that stimulates it and guides it Even so, micro-planning is no more than a set of techniques and methods designed to serve a global policy of endogenous development: its application presupposes both a transformation of management structures and a change in development perspective.

1. See N. J. Colletta, "Participatory research or participation putdown? Reflections on an Indonesian experiment in non-formal education", and J. K. Lindsey, "Participatory research: some comments", in *Convergence: an international journal of adult education*, Toronto, OISE, Vol. IX, No. 3, 1976; J. Chong and G. Lopez, *Micro-planificación educacional participatoria e intersectorial para el desarrollo integrado de la areas urbanas marginadas: pautas metodologicas*, Brasilia, Proyecto de Planificación de recursos humanos, No. 79.

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The book

The overall growth of school enrolments has not led in general to a reduction of educational disparities. Such a reduction supposes on the contrary a deliberate plan of action, and at the same time a change of perspective and of methods of planning.

The present publication — which is the outcome of an international research project, in which specialists from various countries took part — is addressed in the first place to educational planners and is intended to offer them some basis for approaching the problem of reducing regional disparities through a reorganization of the educational network and by improving the quality of the educational service. The study begins with a presentation of the methodological indicators used in diagnosing inter- and intra-regional disparities and a discussion of more technical problems linked to the choice of indicators and statistical measurement. The authors then go on to examine the different factors which affect the phenomenon of disparities and attempt to analyse what the implications are for educational planning.

The authors

The authors of this book are both staff members of the IIEP. In recent years they have undertaken research on the problem of inequalities in educational development and on microplanning methodology. They are co-editors of two other volumes on the theme of regional disparities: *Regional disparities in educational development: a controversial issue* and *Regional disparities in educational development: diagnosis and policies for reduction* (1980). In addition, Ta Ngoc Châu has published *Demographic aspects of educational planning* (1969), *Population growth and costs of education in developing countries* (1972), *Educational policy and its financial implications in Tanzania* (1975), and *Financement et politique éducative : le cas du Sénégal* (1976).

ISBN 92-803-1100-X